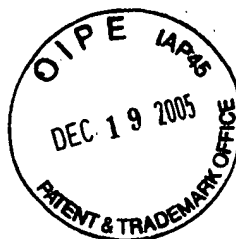


SEQUENCE LISTING



**COPY**

<110> Innogenetics N.V.

<120> New sequences of hepatitis C virus genotypes for diagnosis, prophylaxis and therapy

<130> 35

<160> 284

<170> PatentIn version 3.1

<210> 1

<211> 213

<212> DNA

<213> hepatitis C virus

<400> 1  
ctcacggaac ggctttactg cggggggcct atgttcaaca gcaagggggc ccagtgtggt 60  
tatcgccgct gccgtgccag tggagttctg cctaccagct tcggcaacac aatcacttgc 120  
tacatcaagg ccacagcggc tgcaagggcc gcaggcctcc ggaacccgga ctttcttgtc 180  
tgcggagatg atctggctgt ggtggctgag agt 213

<210> 2

<211> 71

<212> PRT

<213> hepatitis C virus

<400> 2

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly  
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr  
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala  
35 40 45

Arg Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp  
50 55 60

Leu Val Val Val Ala Glu Ser  
65 70

<210> 3

<211> 213

<212> DNA  
<213> hepatitis C virus

<400> 3  
ctcacggaac ggctttactg cgggggccct atgttcaaca gcaagggggc ccagtgtggt 60  
tatcgccgct gccgtgccag tggagttctg cctaccagct tcggcaacac aatcacttgc 120  
tacatcaagg ccacagcggc tgcaagggcc gcaggcctcc ggaacccgga ctttcttgtc 180  
tgcgagatg atctggctgt ggtggctgag agt 213

<210> 4  
<211> 71  
<212> PRT  
<213> hepatitis C virus

<400> 4  
Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly  
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr  
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala  
35 40 45

Lys Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp  
50 55 60

Leu Val Val Val Ala Glu Ser  
65 70

<210> 5  
<211> 213  
<212> DNA  
<213> hepatitis C virus

<400> 5  
ctcacggagc ggctttactg cgggggccct atgtttaaca gcaagggggc ccagtgtggt 60  
tatcgccgtt gccgtgccag tggagttctg cctaccagct tcggcaacac aatcacttgt 120  
tacatcaaag ccacagcggc cgcaaaagcc gcaggcctcc ggagcccgga ctttcttgtc 180  
tgcgagatg atctggctgt ggtggctgag agt 213

<210> 6  
<211> 71

<212> PRT  
<213> hepatitis C virus

<400> 6

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly  
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr  
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala  
35 40 45

Lys Ala Ala Gly Leu Arg Ser Pro Asp Phe Leu Val Cys Gly Asp Asp  
50 55 60

Leu Val Val Val Ala Glu Ser  
65 70

<210> 7  
<211> 213  
<212> DNA  
<213> hepatitis C virus

<400> 7  
ctcacggagc ggctttactg cggggggccct atgtttaaca gcaaaggggc ccagtgtggt 60  
tatcgccgtt gccgtgccag tggagttctg cctaccagct tcggcaacac aatcacttgt 120  
tacatcaaag ccacagcggc cgcaaaagcc gcaggcctcc ggagcccga ctttcttgtc 180  
tgcgagatg atctggctgt ggtggctgag agt 213

<210> 8  
<211> 71  
<212> PRT  
<213> hepatitis C virus

<400> 8

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly  
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr  
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala  
35 40 45

Lys Ala Ala Gly Leu Arg Ser Pro Asp Phe Leu Val Cys Gly Asp Asp  
50 55 60

Leu Val Val Val Ala Glu Ser  
65 70

<210> 9  
<211> 213  
<212> DNA  
<213> hepatitis C virus

<400> 9  
ctcacggagc ggctttactg cgggggccct atgttcaaca gcaagggggc ccagtgtggt 60  
tatcgccggt gtcgtgccag tggagtcttg cctaccagtt tcggcaacac aatcacttgt 120  
tacatcaagg ccacagcggc tgcaaaagcc gcaggcctcc ggaaccgga ctttcttggt 180  
tgcgagatg atttggtcgt ggtggctgag agt 213

<210> 10  
<211> 71  
<212> PRT  
<213> hepatitis C virus

<400> 10

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly  
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr  
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala  
35 40 45

Lys Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp  
50 55 60

Leu Val Val Val Ala Glu Ser  
65 70

<210> 11  
<211> 213  
<212> DNA  
<213> hepatitis C virus

<400> 11  
ctcacggagc ggctttactg cggggggccct atgttcaaca gcaagggggc ccagtgtggt 60  
tatcgccgtt gtcgtgccag tggagttctg cctaccagtt tcggcaacac aatcacttgt 120  
tacatcaagg ccacagcggc tgcaaaagcc gcaggcctcc ggaaccgga ctttcttgtt 180  
tgcggagatg atttggtcgt ggtggctgag agt 213

<210> 12  
<211> 71  
<212> PRT  
<213> hepatitis C virus

<400> 12

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly  
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr  
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala  
35 40 45

Lys Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp  
50 55 60

Leu Val Val Val Ala Glu Ser  
65 70

<210> 13  
<211> 541  
<212> DNA  
<213> hepatitis C virus

<400> 13  
cgtcggcgct cctgtaggag gcgtcgcaag agcccttgcg catggcgtga gggcccttga 60  
agacgggata aatttcgcaa cagggaattt gcccggttgc tccttttcta tcttccttct 120  
tgctctgttc tcttgcttaa tccatccagc agctagtcta gagtggcgga acacgtctgg 180  
cctctatgtc cttaccaacg actgttccaa tagcagtatt gtgtatgagg ccgatgacgt 240  
tattctgcac acacccggct gtgtaccttg tgttcaggac ggtaatacat ctgcgtgctg 300  
gacccagtg acacctacag tggcagtcag gtacgtcgga gcaaccaccg cttcgatacg 360  
caggcatgta gacatgttgg tgggcgcggc cacgatgtgc tctgctctct acgtgggtga 420

tatgtgtggg gccgtcttcc tcgtgggaca agccttcacg ttcagacctc gtcgccatca 480  
aacgggtccag acctgtaact gctcactgta cccaggccat ctttcaggac accgaatggc 540  
t 541

<210> 14  
<211> 180  
<212> PRT  
<213> hepatitis C virus

<400> 14

Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val  
1 5 10 15

Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly  
20 25 30

Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Ile His  
35 40 45

Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu  
50 55 60

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val  
65 70 75 80

Ile Leu His Thr Pro Gly Cys Val Pro Cys Val Gln Asp Gly Asn Thr  
85 90 95

Ser Ala Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Arg Tyr Val  
100 105 110

Gly Ala Thr Thr Ala Ser Ile Arg Arg His Val Asp Met Leu Val Gly  
115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala  
130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln  
145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly  
165 170 175

His Arg Met Ala

180

<210> 15

<211> 541

<212> DNA

<213> hepatitis C virus

<400> 15

cgtcggcgct cctgtaggag gcgtcgcaag agcccttgcg catggcgtga gggcccttga 60  
agacgggata aatttcgcaa cagggaattt gcccggttgc tccttttcta tcttccttcc 120  
tgctctgttc tcttgcttaa tccatccagc agctagtcta gagtggcgga acacgtctgg 180  
cctctatgtc cttaccaacg actgttccaa tagcagtatt gtgtatgagg ccgatgacgt 240  
tattctgcac acacccggct gtgtaccttg tgttcaggac ggtaatacat ctgcgtgctg 300  
gacccagtg acacctacag tggcagtcag gtacgtcgga gcaaccaccg cttcgatacg 360  
caggcatgta gacatattgg tgggcgcggc cacaatgtgc tctgctctct acgtgggtga 420  
tatgtgtggg gccgtcttcc tcgtgggaca agccttcacg ttcagacctc gtcgccatca 480  
aacggtccag acctgtaact gctcactgta cccaggccat ctttcaggac accgaatggc 540  
t 541

<210> 16

<211> 180

<212> PRT

<213> hepatitis C virus

<400> 16

Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val  
1 5 10 15

Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly  
20 25 30

Cys Ser Phe Ser Ile Phe Leu Pro Ala Leu Phe Ser Cys Leu Ile His  
35 40 45

Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu  
50 55 60

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val  
65 70 75 80

Ile Leu His Thr Pro Gly Cys Val Pro Cys Val Gln Asp Gly Asn Thr  
85 90 95

Ser Ala Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Arg Tyr Val  
100 105 110

Gly Ala Thr Thr Ala Ser Ile Arg Arg His Val Asp Ile Leu Val Gly  
115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala  
130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln  
145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly  
165 170 175

His Arg Met Ala  
180

<210> 17  
<211> 541  
<212> DNA  
<213> hepatitis C virus

<400> 17  
cgctcggcgt cctgtaggag gcgtcgcaag agcccttgcg catggcgtga gggcccttga 60  
agacgggata aatttcgcaa caggaattt gcccggttgc tccttttcta tcttccttct 120  
tgctctgttc tcttgcttaa tccatccagc agctagtcta gagtggcgga acacgtctgg 180  
cctctacgtc cttaccaacg actgttccaa tagcagtatt gtgtatgagg ccgatgacgt 240  
tattctgcac acaccgggt gtgtaccttg tgttcaggac ggtaatacat ctgcgtgctg 300  
gacccagtg acacctacag tggcagtcag gtacgtcgga gcaaccaccg cttcgatacg 360  
caggcatgta gacatattgg tgggcgcggc cacgatgtgc tctgctctct acgtgggtga 420  
tatgtgtggg gccgtcttcc tcgtgggaca agccttcacg ttcagacctc gtcgccatca 480  
aacggtccag acctgtaact gtcactgta cccaggccat ctttcaggac accgaatggc 540  
t 541



<210> 18  
<211> 180  
<212> PRT  
<213> hepatitis C virus

<400> 18

Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val  
1 5 10 15

Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly  
20 25 30

Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Ile His  
35 40 45

Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu  
50 55 60

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val  
65 70 75 80

Ile Leu His Thr Pro Gly Cys Val Pro Cys Val Gln Asp Gly Asn Thr  
85 90 95

Ser Ala Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Arg Tyr Val  
100 105 110

Gly Ala Thr Thr Ala Ser Ile Arg Arg His Val Asp Ile Leu Val Gly  
115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala  
130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln  
145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly  
165 170 175

His Arg Met Ala  
180

<210> 19  
<211> 541

<212> DNA  
<213> hepatitis C virus

<400> 19  
cgtcggcgct cccgtaggag gcgtcgcaag agcccttgcg catggcgtga gggcccttga 60  
agacgggata aatttcgcaa caggggaattt gcccggttgc tccttttcta ttttccttct 120  
tgctctgttc tcttgcttaa ttcattccagc agctagtcta gagtggcgga atacgtctgg 180  
cctctatgtc cttaccaacg actgttccaa tagcagtatt gtgtacgagg ccgatgacgt 240  
tattctgcac acacccggct gcataccttg tgtccaggac ggcaatacat ccacgtgctg 300  
gaccccgagt acacctacag tggcagtc aa gtacgtcgga gcaaccaccg cttcgatacg 360  
cagtcagtgtg gacctattag tgggcgcggc cagcatgtgc tcagcgctct acgtgggtga 420  
tatgtgtggg gccgtcttcc ttgtgggaca agccttcacg ttcagacctc gtcgccatca 480  
aacgggtccag acctgtaact gctcgctgta cccaggccat ctttcaggac atcgaatggc 540  
t 541

<210> 20  
<211> 180  
<212> PRT  
<213> hepatitis C virus

<400> 20

Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val  
1 5 10 15

Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly  
20 25 30

Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Ile His  
35 40 45

Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu  
50 55 60

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val  
65 70 75 80

Ile Leu His Thr Pro Gly Cys Ile Pro Cys Val Gln Asp Gly Asn Thr  
85 90 95

Ser Thr Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Lys Tyr Val

100

105

110

Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val Asp Leu Leu Val Gly  
 115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala  
 130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln  
 145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly  
 165 170 175

His Arg Met Ala  
 180

<210> 21  
 <211> 541  
 <212> DNA  
 <213> hepatitis C virus

<400> 21  
 cgctcggcgt cccgtaggag gcgtcgcaag agcccttgcg catggcgtga gggcccttga 60  
 agacgggata aatttcgcaa caggggaattt gcccggttgc tccttttcta ttttccttct 120  
 tgctctgttc tcttgcttaa ttcattccagc agctagtcta gagtggcgga atacgtctgg 180  
 cctctatgtc cttaccaacg actgttccaa tagcagtatt gtgtacgagg ccgatgacgt 240  
 tattctgcac acaccgggt gcataccttg tgtccaggac ggcaatacat ccacgtgctg 300  
 gacccagtg acacctacag tggcagtcaa gtacgtcgga gcaaccaccg cttcgatacg 360  
 cagtcagtgt gacctattag tgggcgcggc cacgatgtgc tctgcgtctt acgtgggtga 420  
 catgtgtggg gctgtcttcc tcgtgggaca agccttcacg ttcagacctc gtcgccatca 480  
 aacggtccag acctgtaact gtcgctgta cccaggccat ctttcaggac atcgaatggc 540  
 t 541

<210> 22  
 <211> 180  
 <212> PRT  
 <213> hepatitis C virus

<400> 22

Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val  
 1 5 10 15

Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly  
 20 25 30

Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Ile His  
 35 40 45

Pro Ala Ala Ser Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu  
 50 55 60

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val  
 65 70 75 80

Ile Leu His Thr Pro Gly Cys Ile Pro Cys Val Gln Asp Gly Asn Thr  
 85 90 95

Ser Thr Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Lys Tyr Val  
 100 105 110

Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val Asp Leu Leu Val Gly  
 115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala  
 130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln  
 145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly  
 165 170 175

His Arg Met Ala  
 180

<210> 23  
 <211> 541  
 <212> DNA  
 <213> hepatitis C virus

<400> 23  
 cgctcgcgct cccgtaggag gcgtcgcaag agcccttgcg catggcgtga gggcccttga 60  
 ggacgggata aacttcgcaa cagggaattt gcccggttgc tccttttcta tcttccttct 120



Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala  
 130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln  
 145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly  
 165 170 175

His Arg Met Ala  
 180

<210> 25  
 <211> 541  
 <212> DNA  
 <213> hepatitis C virus

<400> 25  
 cgtcggcgct cccgtaggag gcgtcgcaag agcccttgcg catggcggtga gggcccttga 60  
 ggacgggata aacttcgcaa caggggaattt gcccggttgc tctttttcta tcttccttct 120  
 tgctctgttc tcttgcttaa tccatccagc agctggtcta gagtggcgga atacgtctgg 180  
 cctctatgtc cttaccaacg actgttccaa tagtagtatt gtgtatgagg ccatgacgt 240  
 tattctgcac gcgccccgct gtgtaccttg tgtccaggac ggcaatacgt ctacatgctg 300  
 gacccagta acacctacag tggcagtcag gtacgtcggg gcaaccaccg cttcgatacg 360  
 cagtcattgtg gacctgttag taggcgcggc cacgatgtgc tctgcgcttt acgtgggtga 420  
 tatgtgtggg gccgtcttcc tcgtgggaca agccttcacg ttcagacccc gccgccatca 480  
 aacggtccag acctgtaact gctcgtgtga cccaggccat ctttcaggac atcgaatggc 540  
 t 541

<210> 26  
 <211> 180  
 <212> PRT  
 <213> hepatitis C virus

<400> 26

Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val  
 1 5 10 15

Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly  
 20 25 30

Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Ile His  
 35 40 45

Pro Ala Ala Gly Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu  
 50 55 60

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val  
 65 70 75 80

Ile Leu His Ala Pro Gly Cys Val Pro Cys Val Gln Asp Gly Asn Thr  
 85 90 95

Ser Thr Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Arg Tyr Val  
 100 105 110

Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val Asp Leu Leu Val Gly  
 115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala  
 130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln  
 145 150 155 160

Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly  
 165 170 175

His Arg Met Ala  
 180

<210> 27  
 <211> 541  
 <212> DNA  
 <213> hepatitis C virus

<400> 27  
 cgctcggcgt cccgtaggag gcgtcgcaag agcccttgcg catggcgtga gggcccttga 60  
 ggacgggata aacttcgcaa caggaattt gcccggttgc tctttttcta tcttccttct 120  
 tgctctgttc tcttgcttaa tccatccagc agctggtcta gagtggcgga atacgtctgg 180  
 cctctatgtc cttaccaacg actgttccaa tagtagtatt gtgtatgagg ccgatgacgt 240  
 tattctgcac gcgcccggct gtgtaccttg tgtccaggac ggcaatacgt ctacatgctg 300

gacccagta acacctacag tggcagtcag gtacgtcggg gcaaccaccg cttcgatacg 360  
 cagtcattgtg gacctgttag taggcgcggc cacgatgtgc tctgcgcttt acgtgggtga 420  
 tatgtgtggg gccgtcttcc tcgtgggaca agccttcacg ttcagacccc gccgccatca 480  
 aacgggtccag acctgtaact gctcgtctga cccaggccat ctttcaggac atcgaatggc 540  
 t 541

<210> 28  
 <211> 180  
 <212> PRT  
 <213> hepatitis C virus  
 <400> 28

Val Gly Ala Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val  
 1 5 10 15

Arg Ala Leu Glu Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly  
 20 25 30

Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Ile His  
 35 40 45

Pro Ala Ala Gly Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu  
 50 55 60

Thr Asn Asp Cys Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val  
 65 70 75 80

Ile Leu His Ala Pro Gly Cys Val Pro Cys Val Gln Asp Gly Asn Thr  
 85 90 95

Ser Thr Cys Trp Thr Pro Val Thr Pro Thr Val Ala Val Arg Tyr Val  
 100 105 110

Gly Ala Thr Thr Ala Ser Ile Arg Ser His Val Asp Leu Leu Val Gly  
 115 120 125

Ala Ala Thr Met Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala  
 130 135 140

Val Phe Leu Val Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln  
 145 150 155 160



Thr Val Gln Thr Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly  
165 170 175

His Arg Met Ala  
180

<210> 29  
<211> 287  
<212> DNA  
<213> hepatitis C virus

<400> 29  
tagacttttg ggagagcgtc ttactggac taactcacat agatgccac tttctgtcac 60  
agactaagca gcagggactc aacttctcgt tctgactgc ctaccaagcc actgtgtgcg 120  
ctcgcgcgca ggctcctccc ccaagttggg acgagatgtg gaagtgtctc gtacggctta 180  
agccaacact acatggacct acgcctcttc tatatcggtt ggggcctgtc caaaatgaaa 240  
tctgcttgac acaccccatc acaaaataca tcatggcatg catgtca 287

<210> 30  
<211> 95  
<212> PRT  
<213> hepatitis C virus

<400> 30

Asp Phe Trp Glu Ser Val Phe Thr Gly Leu Thr His Ile Asp Ala His  
1 5 10 15

Phe Leu Ser Gln Thr Lys Gln Gln Gly Leu Asn Phe Ser Phe Leu Thr  
20 25 30

Ala Tyr Gln Ala Thr Val Cys Ala Arg Ala Gln Ala Pro Pro Pro Ser  
35 40 45

Trp Asp Glu Met Trp Lys Cys Leu Val Arg Leu Lys Pro Thr Leu His  
50 55 60

Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Pro Val Gln Asn Glu Ile  
65 70 75 80

Cys Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala Cys Met Ser  
85 90 95

<210> 31  
 <211> 401  
 <212> DNA  
 <213> hepatitis C virus

<400> 31  
 tcacaaatga aatctgcttg acacaccccg tcacaaata cattatggca tgcattgtag 60  
 ctgatctgga agtaaccacc agcacctggg tgttgcttgg aggggtcctc gcggccctag 120  
 cggcctactg cttgtcagtc ggctgcgttg taatcgtggg tcatatcgag ctggggggca 180  
 agccggcact cgttccagac aaggagggtg tgtatcaaca gtacgatgag atggaggagt 240  
 gctcgcaagc cgccccatac atcgaacaag ctcaggtaat agcccaccag ttcaaggaga 300  
 aaatccttgg actgctgcag cgagccaccc aacaacaagc tgtcattgag cccgtaatag 360  
 cttccaactg gcaaaagctt gaaaccttct ggcaacaagca t 401

<210> 32  
 <211> 133  
 <212> PRT  
 <213> hepatitis C virus

<400> 32

Gln Asn Glu Ile Cys Leu Thr His Pro Val Thr Lys Tyr Ile Met Ala  
 1 5 10 15

Cys Met Ser Ala Asp Leu Glu Val Thr Thr Ser Thr Trp Val Leu Leu  
 20 25 30

Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr Cys Leu Ser Val Gly Cys  
 35 40 45

Val Val Ile Val Gly His Ile Glu Leu Gly Gly Lys Pro Ala Leu Val  
 50 55 60

Pro Asp Lys Glu Val Leu Tyr Gln Gln Tyr Asp Glu Met Glu Glu Cys  
 65 70 75 80

Ser Gln Ala Ala Pro Tyr Ile Glu Gln Ala Gln Val Ile Ala His Gln  
 85 90 95

Phe Lys Glu Lys Ile Leu Gly Leu Leu Gln Arg Ala Thr Gln Gln Gln  
 100 105 110

Ala Val Ile Glu Pro Val Ile Ala Ser Asn Trp Gln Lys Leu Glu Thr

Phe Trp His Lys His  
130

<210> 33  
<211> 401  
<212> DNA  
<213> hepatitis C virus

<400> 33  
tccaaaatga aatctgcttg acacaccccg tcacaaaata cattatggca tgcattgtag 60  
ctgatctgga agtaaccacc agcacctggg tgttgcttgg aggggtcctc gcggccctag 120  
cggcctactg cttgtcagtc ggctgcgttg taatcgtggg tcatatcgag ctgggggggca 180  
agccggcact cgttccagac aaggaggtgt tgtatcaaca gtacgatgag atggaggagt 240  
gctcgcaagc cgcccatac atcgaacaag ctcaggtaat agcccaccag ttcaaggaga 300  
aaatccttgg actgctgcag cgagccaccc aacaacaagc tgtcattgag cccgtaatag 360  
cttccaactg gcaaaagctt gaaaccttct ggcacaagca t 401

<210> 34  
<211> 133  
<212> PRT  
<213> hepatitis C virus

<400> 34

Gln Asn Glu Ile Cys Leu Thr His Pro Val Thr Lys Tyr Ile Met Ala  
1 5 10 15

Cys Met Ser Ala Asp Leu Glu Val Thr Thr Ser Thr Trp Val Leu Leu  
20 25 30

Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr Cys Leu Ser Val Gly Cys  
35 40 45

Val Val Ile Val Gly His Ile Glu Leu Gly Gly Lys Pro Ala Leu Val  
50 55 60

Pro Asp Lys Glu Val Leu Tyr Gln Gln Tyr Asp Glu Met Glu Glu Cys  
65 70 75 80

Ser Gln Ala Ala Pro Tyr Ile Glu Gln Ala Gln Val Ile Ala His Gln  
85 90 95

Phe Lys Glu Lys Ile Leu Gly Leu Leu Gln Arg Ala Thr Gln Gln Gln  
 100 105 110

Ala Val Ile Glu Pro Val Ile Ala Ser Asn Trp Gln Lys Leu Glu Thr  
 115 120 125

Phe Trp His Lys His  
 130

<210> 35  
 <211> 401  
 <212> DNA  
 <213> hepatitis C virus

<400> 35  
 tccaaaatga aatctgcttg acacacccca tcacaaaata catcatggca tgcattgtcag 60  
 ctgatctgga agtaaccacc agcacctggg ttttgcttgg aggggtcctc gcggccctag 120  
 cggcctactg cttgtcagtc ggttgtgttg tgattgtggg tcatatcgag ctggggggca 180  
 agccggcaat cggtccagac aaagaggtgt tgtatcaaca atacgatgag atggaagagt 240  
 gtcacaagc tgccccatat atcgaacaag ctcaggtaat agtcaccag ttcaagggaa 300  
 aagtccttgg attgctgcag cgagccaccc aacaacaagc tgtcattgag cccatagtaa 360  
 ctaccaactg gcaaaagctt gaggcctttt ggcacaagca t 401

<210> 36  
 <211> 133  
 <212> PRT  
 <213> hepatitis C virus

<400> 36

Gln Asn Glu Ile Cys Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala  
 1 5 10 15

Cys Met Ser Ala Asp Leu Glu Val Thr Thr Ser Thr Trp Val Leu Leu  
 20 25 30

Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr Cys Leu Ser Val Gly Cys  
 35 40 45

Val Val Ile Val Gly His Ile Glu Leu Gly Gly Lys Pro Ala Ile Val  
 50 55 60

Pro Asp Lys Glu Val Leu Tyr Gln Gln Tyr Asp Glu Met Glu Glu Cys  
 65 70 75 80

Ser Gln Ala Ala Pro Tyr Ile Glu Gln Ala Gln Val Ile Ala His Gln  
 85 90 95

Phe Lys Gly Lys Val Leu Gly Leu Leu Gln Arg Ala Thr Gln Gln Gln  
 100 105 110

Ala Val Ile Glu Pro Ile Val Thr Thr Asn Trp Gln Lys Leu Glu Ala  
 115 120 125

Phe Trp His Lys His  
 130

<210> 37  
 <211> 401  
 <212> DNA  
 <213> hepatitis C virus

<400> 37  
 tccaaaatga aatctgcttg acacacccca tcacaaaata catcatggca tgcattgtag 60  
 ctgatctgga agtaaccacc agcacctggg ttttgcttgg aggggtcctc gcggccctag 120  
 cggcctactg cttgtcagtc ggttgtgttg tgattgtggg tcatatcgag ctgggggggca 180  
 agccggcaat cgttccagac aaagaggtgt tgtatcaaca atacgatgag atggaagagt 240  
 gctcacaagc tgccccatat atcgaacaag ctcaggtgat agctcaccag ttcaaggaaa 300  
 aagtccttgg attgctgcag cgagccaccc aacaacaagc tgtcattgag cccatagtaa 360  
 ctaccaactg gcaaaagctt gaggcctttt ggcacaagca t 401

<210> 38  
 <211> 133  
 <212> PRT  
 <213> hepatitis C virus

<400> 38

Gln Asn Glu Ile Cys Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala  
 1 5 10 15

Cys Met Ser Ala Asp Leu Glu Val Thr Thr Ser Thr Trp Val Leu Leu  
 20 25 30

Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr Cys Leu Ser Val Gly Cys  
 35 40 45

Val Val Ile Val Gly His Ile Glu Leu Gly Gly Lys Pro Ala Ile Val  
 50 55 60

Pro Asp Lys Glu Val Leu Tyr Gln Gln Tyr Asp Glu Met Glu Glu Cys  
 65 70 75 80

Ser Gln Ala Ala Pro Tyr Ile Glu Gln Ala Gln Val Ile Ala His Gln  
 85 90 95

Phe Lys Glu Lys Val Leu Gly Leu Leu Gln Arg Ala Thr Gln Gln Gln  
 100 105 110

Ala Val Ile Glu Pro Ile Val Thr Thr Asn Trp Gln Lys Leu Glu Ala  
 115 120 125

Phe Trp His Lys His  
 130

<210> 39  
 <211> 401  
 <212> DNA  
 <213> hepatitis C virus

<400> 39  
 tccaaaatga aatctgcttg acacacccca tcacaaaata catcatggca tgcattgtag 60  
 ctgatctgga agtaaccacc agcacctggg ttttgcttgg aggggtcctc gcggccctag 120  
 cggcctactg cttgtcagtc ggttgtgttg tgattgtggg tcatatcgag ctgggggggca 180  
 agccggcaat cgttccagac aaagaggtgt tgtatcaaca atacgatgag atggaagagt 240  
 gctcacaagc tgcccatat atcgaacaag ctcaggtaat agctcaccag ttcaaggaaa 300  
 aagtccttgg attgctgcag cgagccacc aacaacaagc tgtcattgag cccatagtaa 360  
 ctaccaactg gcaaaagctt gaggcctttt ggcacaagca t 401

<210> 40  
 <211> 133  
 <212> PRT  
 <213> hepatitis C virus

<400> 40

Gln Asn Glu Ile Cys Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala

1	5	10	15
Cys Met Ser Ala Asp Leu Glu Val Thr Thr Ser Thr Trp Val Leu Leu	20	25	30
Gly Gly Val Leu Ala Ala Leu Ala Ala Tyr Cys Leu Ser Val Gly Cys	35	40	45
Val Val Ile Val Gly His Ile Glu Leu Gly Gly Lys Pro Ala Ile Val	50	55	60
Pro Asp Lys Glu Val Leu Tyr Gln Gln Tyr Asp Glu Met Glu Glu Cys	65	70	75
Ser Gln Ala Ala Pro Tyr Ile Glu Gln Ala Gln Val Ile Ala His Gln	85	90	95
Phe Lys Glu Lys Val Leu Gly Leu Leu Gln Arg Ala Thr Gln Gln Gln	100	105	110
Ala Val Ile Glu Pro Ile Val Thr Thr Asn Trp Gln Lys Leu Glu Ala	115	120	125
Phe Trp His Lys His	130		

<210> 41  
 <211> 509  
 <212> DNA  
 <213> hepatitis C virus

<400> 41  
 ccatgagcac gaatcctaaa cctcaaagaa aaaccaaaaag aaacaccaac cgtcgcccac 60  
 aggacgtcaa gttcccgggc ggtggtcaga tcgttggcgg agtttacttg ttgccgcgca 120  
 ggggccctag gatgggtgtg cgcgcgactc ggaagacttc ggaacgggtcg caaccccgtg 180  
 gacggcgtca gcctattccc aaggcgcgcc agcccacggg ccggtcctgg ggtcaacccg 240  
 ggtacccttg gcccctttac gccaatgagg gcctcgggtg ggcaggggtg ctgctctccc 300  
 ctcgaggctc tcggcctaata tggggcccca atgacccccg gcgaaaatcg cgtaatttgg 360  
 gtaagggtcat cgatacccta acgtgcggat tcgccgatct catgggggtat atcccgtctg 420  
 taggcggccc cattgggggc gtcgcaaggg ctctcgaca cggtgtgagg gtccttgagg 480

acggggtaaa ctatgcaaca gggaattta

509

<210> 42  
<211> 169  
<212> PRT  
<213> hepatitis C virus

<400> 42

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro  
100 105 110

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile  
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu  
165

<210> 43  
<211> 509  
<212> DNA



<213> hepatitis C virus

<400> 43

```
ccatgagcac gaatcctaaa cctcaaagaa aaaccaaag aaacaccaac cgtcgccac 60
aggacgtcaa gttccccgggc ggtggtcaga tcgttggcgg agtttacttg ttgccgcgca 120
ggggccctag gatgggtgtg cgcgcgactc ggaagacttc ggaacggtcg caaccccgtg 180
gacggcgctca gcctattccc aaggcgcgcc agcccacggg ccggtcctgg ggtcaacccg 240
ggtacccttg gcccttttac gccaatgagg gcctcgggtg ggcagggtgg ctgctctccc 300
ctcgaggctc tcggccta at tggggcccca atgacccccg gcgaaaatcg cgtaatttgg 360
gtaaggatcat cgatacccta acgtgcggat tcgccgatct catggggtat atcccgctcg 420
taggcggccc cattgggggc gtcgcaaggg ctctcgaca cgggtgtgagg gtccttgagg 480
acggggtaaa ctatgcaaca gggaattta 509
```

<210> 44

<211> 169

<212> PRT

<213> hepatitis C virus

<400> 44

```
Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15
```

```
Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30
```

```
Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala
35 40 45
```

```
Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60
```

```
Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly
65 70 75 80
```

```
Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95
```

```
Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
100 105 110
```

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile  
 130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
 145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu  
 165

<210> 45  
 <211> 580  
 <212> DNA  
 <213> hepatitis C virus

<400> 45  
 aacgtgcgga ttcgccgata tcatggggta tatcccgcgc gtaggcggcc ccattggggg 60  
 cgtcgcaagg gctctcgac acggtgtgag ggtccttgag gacggggtaa actatgcaac 120  
 aggaattta cccggttgct ctttctctat ctttattctt gctcttctct cgtgtctgac 180  
 cgttccggcc tctgcagttc cctaccgaaa tgcctctggg atttatcatg ttaccaatga 240  
 ttgccccaaac tcttccatag tctatgaggc agataacctg atcctacacg cacctgggtg 300  
 cgtgccttgt gtcatgacag gtaatgtgag tagatgctgg gtccaaatta ccctacact 360  
 gtcagccccg agcctcggag cagtcacggc tcctcttcgg agagccgttg actacctagc 420  
 gggagggggct gccctctgct ccgcgttata cgtaggagac gcgtgtgggg cactattctt 480  
 ggtaggcaa atgttcacct ataggcctcg ccagcacgct acggtgcaga actgcaactg 540  
 ttccatttac agtggccatg ttaccggcca ccggatggca 580

<210> 46  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus

<400> 46

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly  
 1 5 10 15

Pro Ile Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu  
 20 25 30

Glu Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
35 40 45

Ser Ile Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
50 55 60

Ala Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp  
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His  
85 90 95

Ala Pro Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys  
100 105 110

Trp Val Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val  
115 120 125

Thr Ala Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala  
130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu  
145 150 155 160

Val Gly Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln  
165 170 175

Asn Cys Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met  
180 185 190

Ala

<210> 47  
<211> 580  
<212> DNA  
<213> hepatitis C virus

<400> 47  
aacgtgcgga ttcgccgatc tcatggggta tatcccgtc gtaggcggcc ccattggggg 60  
cgtcgcaagg gctctcgac acggtgtgag ggtccttgag gacggggtaa actatgcaac 120  
agggaattta cccggttgct ctttctctat ctttattctt gctcttctct cgtgtctgac 180

cggtccggcc tctgcagttc cctaccgaaa tgccctctggg atttatcatg ttaccaatga 240  
 ttgccc aaac tcttccatag tctatgaggc agataacctg atcctacacg cacctgggtg 300  
 cgtgccttgt gtcatgacag gtaatgtgag tagatgctgg gtccaaatta cccctacact 360  
 gtcagccccg agcctcggag cagtcacggc tctcttctcg agagccgttg actacctagc 420  
 gggaggggct gccctctgct ccgcgttata cgtaggagac gcgtgtgggg cactattctt 480  
 ggtaggccaa atgttcacct ataggcctcg ccagcacgct acggtgcaga actgcaactg 540  
 ttccatttac agtggccatg ttaccggcca ccggatggca 580

<210> 48  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus

<400> 48

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly  
 1 5 10 15

Pro Ile Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu  
 20 25 30

Glu Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
 35 40 45

Ser Ile Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
 50 55 60

Ala Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp  
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His  
 85 90 95

Ala Pro Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys  
 100 105 110

Trp Val Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val  
 115 120 125

Thr Ala Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala  
 130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu  
 145 150 155 160

Val Gly Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln  
 165 170 175

Asn Cys Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met  
 180 185 190

Ala

<210> 49  
 <211> 959  
 <212> DNA  
 <213> hepatitis C virus

<400> 49  
 ccatgagcac gaatcctaaa cctcaaagaa aaacaaaaag aaacaccaac cgtcgcccac 60  
 aggacgtcaa gttcccgggc ggtggtcaga tcgttggcgg agtttacttg ttgccgcgca 120  
 ggggccctag gatgggtgtg cgcgcgactc ggaagacttc ggaacggtcg caaccccgtg 180  
 gacggcgctca gcctattccc aaggcgcgcc agcccacggg ccggtcctgg ggtcaaccgc 240  
 ggtacccttg gcccttttac gccaatgagg gcctcgggtg ggcagggtgg ctgctctccc 300  
 ctcgaggctc tcggcctaata tggggcccca atgacccccg gcgaaaatcg cgtaatttgg 360  
 gtaagggtcat cgatacccta acgtgcggat tcgccgatct catgggggat atcccgtctg 420  
 taggcggccc cattgggggc gtcgcaaggg ctctcgaca cgggtgtgagg gtccttgagg 480  
 acggggtaaa ctatgcaaca gggaatttac ccggttgctc tttctctatc tttattcttg 540  
 ctcttctctc gtgtctgacc gttccggcct ctgcagttcc ctaccgaaat gcctctggga 600  
 tttatcatgt taccaatgat tgcccaaact cttccatagt ctatgaggca gataacctga 660  
 tcctacaagc acctgggtgc gtgccttggtg tcatgacagg taatgtgagt agatgctggg 720  
 tccaaattac ccctacactg tcagccccga gcctcggagc agtcacggct cctcttcgga 780  
 gagccgttga ctacctagcg ggaggggctg ccctctgctc cgcgttatac gtaggagacg 840  
 cgtgtggggc actattcttg gtaggccaaa tggtcaccta taggcctcgc cagcacgcta 900  
 cgggtgcagaa ctgcaactgt tccatttaca gtggccatgt taccggccac cggatggca 959

<210> 50

<211> 319  
<212> PRT  
<213> hepatitis C virus

<400> 50

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro  
100 105 110

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Val  
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
145 150 155 160

Gly Val Asn Tyr Pro Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Val  
180 185 190

Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp Cys Pro  
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His Ala Pro  
 210 215 220

Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys Trp Val  
 225 230 235 240

Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val Thr Ala  
 245 250 255

Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys  
 260 265 270

Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu Val Gly  
 275 280 285

Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln Asn Cys  
 290 295 300

Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met Ala  
 305 310 315

<210> 51  
 <211> 959  
 <212> DNA  
 <213> hepatitis C virus

<400> 51  
 ccatgagcac gaatcctaaa cctcaaagaa aaaccaaag aaacaccaac cgtcgccac 60  
 aggacgtcaa gttccccgggc ggtggtcaga tcgttggcgg agtttacttg ttgccgcgca 120  
 ggggccctag gatgggtgtg cgcgcgactc ggaagacttc ggaacggtcg caaccccg 180  
 gacggcgctca gcctattccc aaggcgcgcc agcccacggg ccggtcctgg ggtcaacccg 240  
 ggtacccttg gcccctttac gccaatgagg gcctcgggtg ggcaggggtg ctgctctccc 300  
 ctcgaggctc tcggcctaatt tggggcccca atgacccccg gcgaaaatcg cgtaatttgg 360  
 gtaagggtcat cgatacccta acgtgcggat tcgccgatct catgggggtac atcccgctcg 420  
 taggcggccc cgttgggggc gtcgcaaggg ctctcgaca cgggtgtgagg gtccttgagg 480  
 acggggtaaa ctatccaaca gggaatttac ccggttgctc tttctctatc tttattcttg 540  
 ctcttctctc gtgtctgacc gttccggcct ctgcagttcc ctaccgaaat gcctctggga 600  
 tttatcatgt taccaatgat tgcccaaact cttccatagt ctatgaggca gataacctga 660

tcctacacgc acctggttgc gtgccttgtg tcatgacagg taatgtgagt agatgctggg 720  
 tccaaattac ccctacactg tcagccccga gcctcggagc agtcacggct cctcttcgga 780  
 gagccgttga ctacctagcg ggaggggctg ccctctgctc cgcgttatac gtaggagacg 840  
 cgtgtggggc actattcttg gtaggccaaa tgttcaccta taggcctcgc cagcacgcta 900  
 cgggtgcagaa ctgcaactgt tccatttaca gtggccatgt taccggccac cggatggca 959

<210> 52  
 <211> 319  
 <212> PRT  
 <213> hepatitis C virus

<400> 52

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala  
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly  
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp  
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro  
 100 105 110

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Val  
 130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
 145 150 155 160



Gly Val Asn Tyr Pro Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
 165 170 175

Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Val  
 180 185 190

Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp Cys Pro  
 195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His Ala Pro  
 210 215 220

Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys Trp Val  
 225 230 235 240

Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val Thr Ala  
 245 250 255

Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys  
 260 265 270

Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu Val Gly  
 275 280 285

Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln Asn Cys  
 290 295 300

Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met Ala  
 305 310 315

<210> 53  
 <211> 959  
 <212> DNA  
 <213> hepatitis C virus

<400> 53  
 ccatgagcac gaatcctaaa cctcaaagaa aaacaaaag aaacaccaac cgtcgcccac 60  
 aggacgtcaa gttcccgggc ggtggtcaga tcgttggcgg agtttacttg ttgccgcgca 120  
 ggggccctag gatgggtgtg cgcgcgactc ggaagacttc ggaacggtcg caaccccggtg 180  
 gacggcgctca gcctattccc aaggcgcgcc agcccacggg ccggtcctgg ggtcaaccgg 240  
 ggtacccttg gcccttttac gccaatgagg gcctcgggtg ggcagggtgg ctgctctccc 300

ctcgaggctc tcggcctaata tggggcccca atgacccccg gcgaaaatcg cgtaatttgg 360  
 gtaaggtcat cgatacccta acgtgcggat tcgccgatct catgggggtay atcccgtcg 420  
 taggcggccc crttgggggc gtcgcaaggg ctctcgcaca cgggtgtgagg gtccttgagg 480  
 acggggtaaaa ctatscaaca ggggaatttac ccggttgctc tttctctatc tttattcttg 540  
 ctcttctctc gtgtctgacc gttccggcct ctgcagttcc ctaccgaaat gcctctggga 600  
 tttatcatgt taccaatgat tgcccaaact cttccatagt ctatgaggca gataacctga 660  
 tcctacacgc acctgggttg gtgccttggtg tcatgacagg taatgtgagt agatgctggg 720  
 tccaaattac ccctacactg tcagccccga gcctcggagc agtcacggct cctcttcgga 780  
 gagccgttga ctacctagcg ggaggggctg ccctctgctc cgcgttatac gtaggagacg 840  
 cgtgtggggc actattcttg gtaggccaaa tgttcaccta taggcctcgc cagcacgcta 900  
 cgggtgcagaa ctgcaactgt tccatttaca gtggccatgt taccggccac cggatggca 959

<210> 54  
 <211> 319  
 <212> PRT  
 <213> hepatitis C virus

<400> 54

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala  
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly  
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp  
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro  
 100 105 110

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Val  
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
145 150 155 160

Gly Val Asn Tyr Pro Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Val  
180 185 190

Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp Cys Pro  
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His Ala Pro  
210 215 220

Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys Trp Val  
225 230 235 240

Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val Thr Ala  
245 250 255

Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys  
260 265 270

Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu Val Gly  
275 280 285

Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln Asn Cys  
290 295 300

Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met Ala  
305 310 315

<210> 55

<211> 354

<212> DNA

<213> hepatitis C virus

<220>  
 <221> misc\_feature  
 <222> (191)..(191)  
 <223> "n" is any nucleotide

<400> 55  
 accaccggag cttctatcac atactccact tacggcaagt tccttgctga tggaggggtgt 60  
 tcaggcggcg cgcattgacgt gatcatatgc gacgagtgcc attcccagga cgccaccacc 120  
 attcttgagg taggcactgt ccttgaccag gcagagacgg ctggagctag gctcgtcgtc 180  
 ttggccacgg ncacccctcc cggcagtgtg acaacgcccc accccaacat cgaggaagtg 240  
 gccctgcctc aggaggggga gggtcccttc tacggcagag ccattcccct tgcttttata 300  
 aagggtggta ggcattctcat cttctgccat tccaagaaaa attgtgatga actc 354

<210> 56  
 <211> 118  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (64)..(64)  
 <223> "Xaa" is any amino acid

<400> 56

Thr Thr Gly Ala Ser Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala  
 1 5 10 15

Asp Gly Gly Cys Ser Gly Gly Ala His Asp Val Ile Ile Cys Asp Glu  
 20 25 30

Cys His Ser Gln Asp Ala Thr Thr Ile Leu Gly Ile Gly Thr Val Leu  
 35 40 45

Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val Leu Ala Thr Xaa  
 50 55 60

Thr Pro Pro Gly Ser Val Thr Thr Pro His Pro Asn Ile Glu Glu Val  
 65 70 75 80

Ala Leu Pro Gln Glu Gly Glu Val Pro Phe Tyr Gly Arg Ala Ile Pro  
 85 90 95

Leu Ala Phe Ile Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys  
 100 105 110

Lys Asn Cys Asp Glu Leu  
 115

<210> 57  
 <211> 354  
 <212> DNA  
 <213> hepatitis C virus

<220>  
 <221> misc\_feature  
 <222> (185)..(185)  
 <223> "n" is any nucleotide

<220>  
 <221> misc\_feature  
 <222> (191)..(191)  
 <223> "n" is any nucleotide

<220>  
 <221> misc\_feature  
 <222> (276)..(276)  
 <223> "n" is any nucleotide

<400> 57  
 accaccggag cttctatcac atactccact tacggcaagt tccttgctga tggaggggtgt 60  
 tcaggcggcg cgtatgacgt gatcatatgc gacgagtgcc attcccagga cgccaccacc 120  
 attcttgggga taggcactgt ccttgaccag gcagagacgg ctggagctag gctcgtcgtc 180  
 ttggnacagg ncaccctcc cggcagtgtg acaacgcccc accccaacat cgaggaagtg 240  
 gccctgcctc aggaggggga ggttccttc tacggnagag ccattcccct tgcttttata 300  
 aagggtggta ggcattctcat cttctgccat tccaagaaaa aatgtgatga actt 354

<210> 58  
 <211> 133  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (62)..(62)  
 <223> "Xaa" is any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (64)..(64)  
<223> "Xaa" is any amino acid.

<220>  
<221> MISC\_FEATURE  
<222> (92)..(92)  
<223> "Xaa" is any amino acid

<400> 58

Thr Thr Gly Ala Ser Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala  
1 5 10 15

Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Val Ile Ile Cys Asp Glu  
20 25 30

Cys His Ser Gln Asp Ala Thr Thr Ile Leu Gly Ile Gly Thr Val Leu  
35 40 45

Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val Leu Xaa Thr Xaa  
50 55 60

Thr Pro Pro Gly Ser Val Thr Thr Pro His Pro Asn Ile Glu Glu Val  
65 70 75 80

Ala Leu Pro Gln Glu Gly Glu Val Pro Phe Tyr Xaa Arg Ala Ile Pro  
85 90 95

Leu Ala Phe Ile Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys  
100 105 110

Lys Lys Cys Asp Glu Leu Arg Gln Ala Thr Asp Gln Pro Gly Arg Glu  
115 120 125

Arg Pro Trp Glu Tyr  
130

<210> 59  
<211> 357  
<212> DNA  
<213> hepatitis C virus

<220>  
<221> misc\_feature

<222> (38)..(38)  
<223> "n" is any nucleotide

<220>  
<221> misc\_feature  
<222> (76)..(76)  
<223> "n" is any nucleotide

<220>  
<221> misc\_feature  
<222> (79)..(79)  
<223> "n" is any nucleotide

<220>  
<221> misc\_feature  
<222> (151)..(151)  
<223> "n" is any nucleotide

<220>  
<221> misc\_feature  
<222> (232)..(232)  
<223> "n" is any nucleotide

<220>  
<221> misc\_feature  
<222> (349)..(349)  
<223> "n" is any nucleotide

<400> 59  
atggcctttca tgtctccgga cttggaggtc attaccanca cttgggttct ggtggggggc 60  
gttgtggcga ccctgncgnc ctactgcttg acggtgggtt cggtagccat agtcggtagg 120  
atcatcctct ctgggaaacc tgccatcatt nccgataggg aggtattata ccagcaattt 180  
gatgagatgg aggagtgtc ggctcgttg ccctatatgg acgaaacacg tnccattgcc 240  
ggacaattca aagagaaagt gtcgggttc atcagcacga ccggccagaa ggctgaaact 300  
ctgaagccgg cagccacgtc tgtgtggaac aaggctgac agttctggnc cacatac 357

<210> 60  
<211> 128  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (13)..(13)  
<223> "Xaa" is any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (26)..(27)  
 <223> "Xaa" is any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (51)..(51)  
 <223> "Xaa" is any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (78)..(78)  
 <223> "Xaa" is any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (117)..(117)  
 <223> "Xaa" is any amino acid

<400> 60

Met Ala Phe Met Ser Pro Asp Leu Glu Val Ile Thr Xaa Thr Trp Val  
 1 5 10 15

Leu Val Gly Gly Val Val Ala Thr Leu Xaa Xaa Tyr Cys Leu Thr Val  
 20 25 30

Gly Ser Val Ala Ile Val Gly Arg Ile Ile Leu Ser Gly Lys Pro Ala  
 35 40 45

Ile Ile Xaa Asp Arg Glu Val Leu Tyr Gln Gln Phe Asp Glu Met Glu  
 50 55 60

Glu Cys Ser Ala Ser Leu Pro Tyr Met Asp Glu Thr Arg Xaa Ile Ala  
 65 70 75 80

Gly Gln Phe Lys Glu Lys Val Leu Gly Phe Ile Ser Thr Thr Gly Gln  
 85 90 95

Lys Ala Glu Thr Leu Lys Pro Ala Ala Thr Ser Val Trp Asn Lys Ala  
 100 105 110

Asp Gln Phe Trp Xaa Thr Tyr Met Trp Asn Phe Ile Ser Gly Ile Gln



115

120

125

<210> 61  
 <211> 357  
 <212> DNA  
 <213> hepatitis C virus  
 <220>  
 <221> misc\_feature  
 <222> (38)..(38)  
 <223> "n" is any nucleotide

<220>  
 <221> misc\_feature  
 <222> (70)..(70)  
 <223> "n" is any nucleotide

<220>  
 <221> misc\_feature  
 <222> (174)..(174)  
 <223> "n" is any nucleotide

<220>  
 <221> misc\_feature  
 <222> (339)..(339)  
 <223> "n" is any nucleotide

<400> 61  
 atggccttgca tgtctgcgga cctggaggtc attaccanca cttgggttct ggtggggggc 60  
 gttgtggcgn ccctggcggc ctactgcttg acggtggggt cggtagccat agtcggtagg 120  
 atcatcctct ctgggaaacc tgccatcatt cccgataggg aggcattata ccancaattt 180  
 gatgagatgg aggagtgctc ggcctcgctt ccctatatgg acgagacacg tgccattgcc 240  
 ggacaattca aagagaaaagt gtcggttc atcagcacga ccggccagaa ggctgaaact 300  
 ctgaagccgg cagccacgtc tgtgtggaac aaggctganc agttctgggc cacatac 357

<210> 62  
 <211> 128  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (13)..(13)  
 <223> "Xaa" is any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (24)..(24)  
<223> "Xaa" is any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (58)..(58)  
<223> "Xaa" is any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (113)..(113)  
<223> "Xaa" is any amino acid

<400> 62

Met Ala Cys Met Ser Ala Asp Leu Glu Val Ile Thr Xaa Thr Trp Val  
1 5 10 15

Leu Val Gly Gly Val Val Ala Xaa Leu Ala Ala Tyr Cys Leu Thr Val  
20 25 30

Gly Ser Val Ala Ile Val Gly Arg Ile Ile Leu Ser Gly Lys Pro Ala  
35 40 45

Ile Ile Pro Asp Arg Glu Ala Leu Tyr Xaa Gln Phe Asp Glu Met Glu  
50 55 60

Glu Cys Ser Ala Ser Leu Pro Tyr Met Asp Glu Thr Arg Ala Ile Ala  
65 70 75 80

Gly Gln Phe Lys Glu Lys Val Leu Gly Phe Ile Ser Thr Thr Gly Gln  
85 90 95

Lys Ala Glu Thr Leu Lys Pro Ala Ala Thr Ser Val Trp Asn Lys Ala  
100 105 110

Xaa Gln Phe Trp Ala Thr Tyr Met Trp Asn Phe Ile Ser Gly Ile Gln  
115 120 125

<210> 63  
<211> 28  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPrl61

<400> 63  
accggaggcc aggagagtga tctcctcc

28

<210> 64  
<211> 28  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPrl62

<400> 64  
gggctgctct atcctcatcg acgccatc

28

<210> 65  
<211> 28  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPrl63

<400> 65  
gccagaggct cggaaggcga tcagcgct

28

<210> 66  
<211> 28  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPrl64

<400> 66  
gagctgctct gtcctcctcg acgccgca

28

<210> 67  
<211> 20  
<212> DNA  
<213> artificial

<220>

<221> misc\_feature  
<223> HCPPr23

<400> 67  
ctcatgggggt acattccgct

20

<210> 68  
<211> 27  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPPr54

<400> 68  
ctattaccag ttcacatca tatccca

27

<210> 69  
<211> 24  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPPr16

<400> 69  
ttttaataac atcatgrctg yatg

24

<210> 70  
<211> 33  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPPr66

<400> 70  
ctattattgt atcccrctga tgaartcca cat

33

<210> 71  
<211> 36  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature

<223> HCPrl18

<400> 71

actagtcgac taytgatccr ctatrwartt ccacat

36

<210> 72

<211> 25

<212> DNA

<213> artificial

<220>

<221> misc\_feature

<223> HCPrl17

<400> 72

ttttaaatac atcgcrcctgc atgca

25

<210> 73

<211> 36

<212> DNA

<213> artificial

<220>

<221> misc\_feature

<223> HCPrl19

<400> 73

actagtcgac tarttgcata gcckrttcat ccaytg

36

<210> 74

<211> 34

<212> DNA

<213> artificial

<220>

<221> misc\_feature

<223> HCPrl131

<400> 74

ggaattctag acctctggga ygaraytgga artg

34

<210> 75

<211> 31

<212> DNA

<213> artificial

<220>

<221> misc\_feature

<223> HCPrl130

<400> 75  
ggaattctag acgctaycar gcacgttgyg c 31

<210> 76  
<211> 23  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPr134

<400> 76  
catatagatg cccacttcct atc 23

<210> 77  
<211> 16  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPr3

<400> 77  
gtgtgccagg accatc 16

<210> 78  
<211> 20  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPr4

<400> 78  
gacatgcatg tcatgatgta 20

<210> 79  
<211> 29  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPr152

<400> 79  
tacgcctctt ctatatcggg tggggcctg 29

<210> 80  
<211> 26  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPr52

<400> 80  
atgttgggta aggtcatcga taccct 26

<210> 81  
<211> 25  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPr41

<400> 81  
cccgggaggt ctgtagacc gtgca 25

<210> 82  
<211> 29  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPr40

<400> 82  
ctattaaaga tagagaaaga gcaaccggg 29

<210> 83  
<211> 12  
<212> PRT  
<213> hepatitis C virus

<400> 83

Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu  
1 5 10

<210> 84  
<211> 12  
<212> PRT  
<213> hepatitis C virus

<400> 84

Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val  
1 5 10

<210> 85  
<211> 11  
<212> PRT  
<213> hepatitis C virus

<400> 85

Val Tyr Glu Ala Asp Asp Val Ile Leu His Thr  
1 5 10

<210> 86  
<211> 11  
<212> PRT  
<213> hepatitis C virus

<400> 86

Val Tyr Glu Ala Asp Asn Leu Ile Leu His Ala  
1 5 10

<210> 87  
<211> 13  
<212> PRT  
<213> hepatitis C virus

<400> 87

Val Gln Asp Gly Asn Thr Ser Thr Cys Trp Thr Pro Val  
1 5 10

<210> 88  
<211> 13  
<212> PRT  
<213> hepatitis C virus

<400> 88

Val Met Thr Gly Asn Val Ser Arg Cys Trp Val Gln Ile  
1 5 10

<210> 89



<211> 10  
<212> PRT  
<213> hepatitis C virus

<400> 89

Val Arg Tyr Val Gly Ala Thr Thr Ala Ser  
1 5 10

<210> 90  
<211> 10  
<212> PRT  
<213> hepatitis C virus

<400> 90

Ala Pro Ser Leu Gly Ala Val Thr Ala Pro  
1 5 10

<210> 91  
<211> 10  
<212> PRT  
<213> hepatitis C virus

<400> 91

Arg Pro Arg Arg His Gln Thr Val Gln Thr  
1 5 10

<210> 92  
<211> 10  
<212> PRT  
<213> hepatitis C virus

<400> 92

Arg Pro Arg Gln His Ala Thr Val Gln Asn  
1 5 10

<210> 93  
<211> 9  
<212> PRT  
<213> hepatitis C virus

<400> 93

Gln Pro Thr Gly Arg Ser Trp Gly Gln  
1 5

<210> 94  
<211> 8  
<212> PRT



<213> hepatitis C virus

<400> 94

Val Gln Asp Gly Asn Thr Ser Thr  
1 5

<210> 95

<211> 8

<212> PRT

<213> hepatitis C virus

<400> 95

Val Gln Asp Gly Asn Thr Ser Ala  
1 5

<210> 96

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 96

Val Lys Tyr Val Gly Ala Thr Thr Ala Ser  
1 5 10

<210> 97

<211> 20

<212> PRT

<213> hepatitis C virus

<400> 97

Leu Gly Gly Lys Pro Ala Ile Val Pro Asp Lys Glu Val Leu Tyr Gln  
1 5 10 15

Gln Tyr Asp Glu  
20

<210> 98

<211> 20

<212> PRT

<213> hepatitis C virus

<400> 98

Leu Gly Gly Lys Pro Ala Leu Val Pro Asp Lys Glu Val Leu Tyr Gln  
1 5 10 15

Gln Tyr Asp Glu

<210> 99  
 <211> 20  
 <212> PRT  
 <213> hepatitis C virus

<400> 99

Ser Gln Ala Ala Pro Tyr Ile Glu Gln Ala Gln Val Ile Ala His Gln  
 1 5 10 15

Phe Lys Glu Lys  
 20

<210> 100  
 <211> 20  
 <212> PRT  
 <213> hepatitis C virus

<400> 100

Ile Ala His Gln Phe Lys Glu Lys Val Leu Gly Leu Leu Gln Arg Ala  
 1 5 10 15

Thr Gln Gln Gln  
 20

<210> 101  
 <211> 20  
 <212> PRT  
 <213> hepatitis C virus

<400> 101

Ile Ala His Gln Phe Lys Glu Lys Ile Leu Gly Leu Leu Gln Arg Ala  
 1 5 10 15

Thr Gln Gln Gln  
 20

<210> 102  
 <211> 20  
 <212> PRT  
 <213> hepatitis C virus

<400> 102

Leu Ser Gly Lys Pro Ala Ile Ile Pro Asp Arg Glu Ala Leu Tyr Gln  
 1 5 10 15

Gln Phe Asp Glu  
20

<210> 103  
<211> 20  
<212> PRT  
<213> hepatitis C virus

<400> 103

Leu Ser Gly Lys Pro Ala Ile Ile Pro Asp Arg Glu Val Leu Tyr Gln  
1 5 10 15

Gln Phe Asp Glu  
20

<210> 104  
<211> 20  
<212> PRT  
<213> hepatitis C virus

<400> 104

Ser Ala Ser Leu Pro Tyr Met Asp Glu Thr Arg Ala Ile Ala Gly Gln  
1 5 10 15

Phe Lys Glu Lys  
20

<210> 105  
<211> 20  
<212> PRT  
<213> hepatitis C virus

<400> 105

Ile Ala Gly Gln Phe Lys Glu Lys Val Leu Gly Phe Ile Ser Thr Thr  
1 5 10 15

Gly Gln Lys Ala  
20

<210> 106  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 106

ctccactgta accgaaaagg acatcagggt cgaggaggag gtctatcagt gttgtgacct 60  
ggagcccgaa gcccgcaagg caattaccgc cctaacagag agactctacg tgggcggtcc 120  
catgcataac agcaaggagg acctgtgcgg gtatcgcaga tgtcgcgcaa gcggcgtcta 180  
caccaccagc ttcggaaca cactgacgtg ctacctcaaa gcctcagccg ctatcaaagc 240  
ggcggggctg agagactgca ccatgttggt ctgtggtgat gacctgggtg tcatcgctga 300  
gagcgatggc gtagaggagg acaaacgacc cctcggagcc 340

<210> 107  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 107

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln  
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr Ala Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Lys Ala  
65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Pro Leu Gly  
100 105 110

Ala

<210> 108  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 108  
ctccactgta accgaaaagg acatcagggt cgaggaggag gtatatcagt gttgtgacct 60  
ggagcccagag gcccgagag caattaccgc cctaacagag agactctacg tgggcgggtcc 120  
catgcataac agcaggggag acctgtgcgg gtatcgaga tgccgtgcga gcggcgctta 180  
caccaccagc ttccggaaca cactgacgtg ctatctcaaa gcctcagccg ctatcagagc 240  
ggcggggctg agagactgca ccatgttggt ctgtggtgat gacctggtcg tcattgctga 300  
aagcgatggc gtagaggagg acaaacgagc cctcgaggcc 340

<210> 109  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 109  
Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln  
1 5 10 15  
Cys Cys Asp Leu Glu Pro Glu Ala Arg Arg Ala Ile Thr Ala Leu Thr  
20 25 30  
Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Arg Gly Asp Leu  
35 40 45  
Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
50 55 60  
Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala  
65 70 75 80  
Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95  
Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly  
100 105 110

Ala

<210> 110  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 110  
ctccactgta accgaaaaag acatcagggt cgaggaggag gtatatcagt gttgtgacct 60  
ggagcccgaa gcccgcaagg taattaccgc cctaacagag agactctatg tgggcgggtcc 120  
catgcataat agcaaaggag acctgtgcgg gtatcgaga tgccgcgcaa gcggcgtcta 180  
caccaccagc ttcgggaaca cactgacgtg ctatctcaaa gcctcagccg ccatcagggc 240  
gtcaggggtg agagactgca ctatgctggt ctatggtgac gacctggtcg tcattgccga 300  
gagcgatggc gtagaggagg acaaacgagc cctcggagtc 340

<210> 111  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 111

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln  
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala  
65 70 75 80

Ser Gly Leu Arg Asp Cys Thr Met Leu Val Tyr Gly Asp Asp Leu Val  
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly  
100 105 110

Val

<210> 112  
<211> 340  
<212> DNA

<213> hepatitis C virus

<400> 112

```
ctccactgta accgaaaagg acatcagggt cgaggaggag gtgtatcagt gttgtgacct    60
ggagcccgag gcccgcaagg caattactgc cctaacagag agactctatg tgggcgggtcc    120
catgcataac agcaaggagg acctgtgtgg gtatcgcaga tgccgcgcaa gcggcgtcta    180
caccaccagc ttcgggaaca cactgacgtg ctacctcaaa gcctcagccg ctatcagagc    240
ggcgggggctg agagactgca ccatgttggt ctgtgggtgat gacctggctg tcatcgctga    300
gagcgatggc gttgaggagg acaaacgagc cctcggagcc    340
```

<210> 113

<211> 113

<212> PRT

<213> hepatitis C virus

<400> 113

```
Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1          5          10          15
```

```
Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr Ala Leu Thr
20          25          30
```

```
Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35          40          45
```

```
Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50          55          60
```

```
Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
65          70          75          80
```

```
Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85          90          95
```

```
Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
100         105         110
```

Ala

<210> 114

<211> 340



<212> DNA  
<213> hepatitis C virus

<400> 114  
ctccacggtg accgaaaggg atatcaggac cgaggaagag atctaccagt gctgcgacct 60  
ggagcccgaa gcccgcaagg tgatatccgc cctaacggaa agactctacg tgggcggtcc 120  
catgtacaac tccaaggggg acctatgcgg gcaacggagg tgccgcgcaa gcgggggtcta 180  
caccaccagc ttcgggaaca ctgtaacgtg ttatctcaag gccgttgagg ctactagggc 240  
cgcagggtctg aaaggttgca gcatgctggt ttgtggagac gacttagtcg tcattctgca 300  
gagcggcggc gtagaggagg atgcaagagc cctccgagcc 340

<210> 115  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 115

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Glu Ile Tyr Gln  
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ala Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu  
35 40 45

Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
50 55 60

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Val Ala Ala Thr Arg Ala  
65 70 75 80

Ala Gly Leu Lys Gly Cys Ser Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Cys Glu Ser Gly Gly Val Glu Glu Asp Ala Arg Ala Leu Arg  
100 105 110

Ala

<210> 116

<211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 116  
 ctccactgtg actgagagag acatcaaggt cgaagaagaa gtctatcagt gttgtgatct 60  
 ggagcccgag gcccgcaagg taatagccgc cctcacggag agactctacg tgggcggccc 120  
 catgcataac agcaagggag acctttgcgg gtatcgtaga tgccgcgcga gcggcgata 180  
 caccaccagc ttcgggaaca caatgacgtg ctaccttaag gcctcagcag ccatcagggc 240  
 tgcggggcta aaggattgca ccatgctggt ttgcggtgac gacctagtcg tgatcgccga 300  
 gagcgggtggc gttgaggagg acaaacgagc cctcggagct 340

<210> 117  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

<400> 117

Ser Thr Val Thr Glu Arg Asp Ile Lys Val Glu Glu Glu Val Tyr Gln  
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ala Ala Leu Thr  
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu  
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
 50 55 60

Gly Asn Thr Met Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala  
 65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
 85 90 95

Val Ile Ala Glu Ser Gly Gly Val Glu Glu Asp Lys Arg Ala Leu Gly  
 100 105 110

Ala

<210> 118  
 <211> 574  
 <212> DNA  
 <213> hepatitis C virus

<400> 118  
 acttgccggct ttgccgacct catgggatac atcccgtcg taggcgcccc tgtgggtggc 60  
 gtcgccaggg ccctggcaca cgggtgttagg gctgtggagg acgggatcaa ttatgcgaca 120  
 gggaaatcttc cgggttgctc tttctctatc ttctcttgg cacttctttc gtgcctgact 180  
 gttcccacct cggccgtcaa ctatcgcaat gcctcgggca tctatcacat caccaatgac 240  
 tgcccgaact cgagcatagt gtacgagacc gagcaccaca tcctacacct cccaggggtg 300  
 ttaccctgcg tgagggttgg gaatcagtea cgtgtgtggg tggccctcac tcccaccgtg 360  
 ggggcgcctt acatcggcgc tccgcttgaa tccctccgga gtcattgtgga tctgatggta 420  
 ggtgccgcta ctgcgtgctc cgctctttac atcggagacc tgtgcgggtgg cgtattcttg 480  
 gttggtcaga tgttctcttt ccagccgcgg cgccactgga ctacgcagga ctgcaattgt 540  
 tccatctacg cggggcacgt tacggggccac agga 574

<210> 119  
 <211> 191  
 <212> PRT  
 <213> hepatitis C virus

<400> 119  
 Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
 1 5 10 15  
 Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
 20 25 30  
 Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
 35 40 45  
 Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser  
 50 55 60  
 Ala Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp  
 65 70 75 80  
 Cys Pro Asn Ser Ser Ile Val Tyr Glu Thr Glu His His Ile Leu His  
 85 90 95

Leu Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys  
 100 105 110

Trp Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro  
 115 120 125

Leu Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr  
 130 135 140

Ala Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu  
 145 150 155 160

Val Gly Gln Met Phe Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln  
 165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ala Gly His Val Thr Gly His Arg  
 180 185 190

<210> 120  
 <211> 574  
 <212> DNA  
 <213> hepatitis C virus

<400> 120  
 acgtgcggct ttgccgacct catgggatac atcccgctcg tgggcgcccc tgtgggtggc 60  
 gtcgccaggg ccttggcaca tgggtgtcagg gccgtggagg acgggattaa ctatgcaaca 120  
 gggaatcttc ccggttgctc cttttctatc ttccttctag cacttctctc gtgcttgact 180  
 gtcccggcct cggcgcagca ctaccggaac atctcgggca tttatcacgt caccaatgac 240  
 tgcccgaact ctagtatagt gtatgaagct gaccatcata tcatgcatct accaggggtg 300  
 gtgccttgcg tgagaaccgg gaacacctcg cgctgctggg ttcctttaac acccactgtg 360  
 gctgccccct atgttggcgc gccgctcgaa tccatgcggc ggcacgtgga cttaatgggtg 420  
 ggtgccgcca ccgtctgctc ggccctgtac atcggagacc tttgcggagg tgtcttctctg 480  
 gtcgggcaga tgttcacctt ccggccgcgc cgccattgga ctaccagga ctgcaactgc 540  
 tctatctatg atggccacat caccggccat agaa 574

<210> 121  
 <211> 191  
 <212> PRT  
 <213> hepatitis C virus

<400> 121

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
50 55 60

Ala Gln His Tyr Arg Asn Ile Ser Gly Ile Tyr His Val Thr Asn Asp  
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His  
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Thr Ser Arg Cys  
100 105 110

Trp Val Pro Leu Thr Pro Thr Val Ala Ala Pro Tyr Val Gly Ala Pro  
115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr  
130 135 140

Val Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu  
145 150 155 160

Val Gly Gln Met Phe Thr Phe Arg Pro Arg Arg His Trp Thr Thr Gln  
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Asp Gly His Ile Thr Gly His Arg  
180 185 190

<210> 122

<211> 574

<212> DNA

<213> hepatitis C virus

<400> 122

acgtgcggct tgcgcgacct catgggatac atcccgctcg tgggcgcccc cgttgggggc

60

gtcgccaggg ccctggcgca tggcgtcagg gctgtggagg acgggattaa ctatgcgaca 120  
 ggggaatcttc ccggttgctc tttctctatc ttcctcctgg cacttctttc gtgcctcact 180  
 gtcccagcgt cagctgagca ctaccggaat gcttcgggca tctatcacat caccaatgac 240  
 tgtccgaatt ccagcgtagt ctatgaaact gaccaccata tattgcactt gccgggggtgc 300  
 gtaccctgcg tgagggccgg gaacgtgtct cgttgctgga cgccggtaac acctacgggtg 360  
 gctgccgtat ccatggacgc tccgctcgag tccttcgggc ggcatgtgga cctaattgga 420  
 ggtgcggcca ccgtgtgttc tgtcctctat gttggagacc tctgtggagg tgctttccta 480  
 gtggggcaga tgttcacctt ccagccgct cgccactgga ccacgcagga ttgtaattgc 540  
 tccatctata ctggccatat caccggccac agga 574

<210> 123  
 <211> 191  
 <212> PRT  
 <213> hepatitis C virus

<400> 123

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
 35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
 50 55 60

Ala Glu His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp  
 65 70 75 80

Cys Pro Asn Ser Ser Val Val Tyr Glu Thr Asp His His Ile Leu His  
 85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Ala Gly Asn Val Ser Arg Cys  
 100 105 110

Trp Thr Pro Val Thr Pro Thr Val Ala Ala Val Ser Met Asp Ala Pro  
 115 120 125

Leu Glu Ser Phe Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr  
130 135 140

Val Cys Ser Val Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu  
145 150 155 160

Val Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln  
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg  
180 185 190

<210> 124  
<211> 31  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPPr206

<400> 124  
tggggatccc gtatgatacc cgctgctttg a

31

<210> 125  
<211> 30  
<212> DNA  
<213> artificial

<220>  
<221> misc\_feature  
<223> HCPPr207

<400> 125  
ggcgggaattc ctggcatag cctccgtgaa

30

<210> 126  
<211> 12  
<212> PRT  
<213> hepatitis C virus

<400> 126

Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile  
1 5 10

<210> 127  
<211> 12  
<212> PRT  
<213> hepatitis C virus

<400> 127

Gln His Tyr Arg Asn Ile Ser Gly Ile Tyr His Val  
1 5 10

<210> 128  
<211> 12  
<212> PRT  
<213> hepatitis C virus

<400> 128

Glu His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile  
1 5 10

<210> 129  
<211> 11  
<212> PRT  
<213> hepatitis C virus

<400> 129

Val Tyr Glu Thr Glu His His Ile Leu His Leu  
1 5 10

<210> 130  
<211> 11  
<212> PRT  
<213> hepatitis C virus

<400> 130

Val Tyr Glu Ala Asp His His Ile Met His Leu  
1 5 10

<210> 131  
<211> 11  
<212> PRT  
<213> hepatitis C virus

<400> 131

Val Tyr Glu Thr Asp His His Ile Leu His Leu  
1 5 10

<210> 132  
<211> 13



<212> PRT  
<213> hepatitis C virus

<400> 132

Val Arg Val Gly Asn Gln Ser Arg Cys Trp Val Ala Leu  
1 5 10

<210> 133  
<211> 13  
<212> PRT  
<213> hepatitis C virus

<400> 133

Val Arg Thr Gly Asn Thr Ser Arg Cys Trp Val Pro Leu  
1 5 10

<210> 134  
<211> 13  
<212> PRT  
<213> hepatitis C virus

<400> 134

Val Arg Ala Gly Asn Val Ser Arg Cys Trp Thr Pro Val  
1 5 10

<210> 135  
<211> 10  
<212> PRT  
<213> hepatitis C virus

<400> 135

Ala Pro Tyr Ile Gly Ala Pro Leu Glu Ser  
1 5 10

<210> 136  
<211> 10  
<212> PRT  
<213> hepatitis C virus

<400> 136

Ala Pro Tyr Val Gly Ala Pro Leu Glu Ser  
1 5 10

<210> 137  
<211> 10  
<212> PRT  
<213> hepatitis C virus

<400> 137

Ala Val Ser Met Asp Ala Pro Leu Glu Ser  
1 5 10

<210> 138

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 138

Gln Pro Arg Arg His Trp Thr Thr Gln Asp  
1 5 10

<210> 139

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 139

Arg Pro Arg Arg His Trp Thr Thr Gln Asp  
1 5 10

<210> 140

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 140

Arg Pro Arg Arg His Trp Thr Thr Gln Asp  
1 5 10

<210> 141

<211> 23

<212> DNA

<213> artificial

<220>

<221> misc\_feature

<223> HCPr109

<400> 141

tgggatatga tgatgaactg gtc

23

<210> 142

<211> 24

<212> DNA

<213> artificial

<220>

<221> misc\_feature

<223> HCPri14

<400> 142

ccaggtacaa ccgaaccaat tgcc

24

<210> 143

<211> 957

<212> DNA

<213> hepatitis C virus

<400> 143

atgagcacaa atcctaaacc tcaaagaaaa accaaaagaa acactaaccg ccgcccacag 60

gacgtcaagt tcccgggcgg tggccagatc gttggtggag tatacttggt gccgcgcagg 120

ggcccccggt tgggtgtgcg cgcgacgagg aaaacttccg agcgggtcca gccacgtggg 180

aggcgccagc ccatcccaaa agatcggcgc cccactggca agtcctgggg aaaaccagga 240

tacccttggc ccctgtacgg gaatgagggc ctcggctggg caggggtggct cctgtcccc 300

cgaggggtctc gcccgtcatt gggcccaact gacccccggc acaggtcacg caacttgggt 360

aagggtcatcg atacccttac gtgtggcttt gccgacctca tggggtacat ccctgtcgtc 420

ggcgccccag ttggtggtgt cgccagagct ctcgcgcatg gcgtgagagt tctggaagac 480

gggataaact atgcaacagg gaacttgccc ggttgctcct tttctatctt cttattggcc 540

ctgctatctt gtatcactgt gccggtctcc ggcttgagg tcaagaacac cagcagctct 600

tacatggtaa ccaatgactg ccagaacagt agcatcgtct ggcagctcag ggatgctggt 660

cttcacgtcc ccgggtgtgt cccttgtag gaggaaggga acatatcccg ctgttgata 720

ccggtttcgc ccaatatagc tgtgagccaa cctggtgccc ttaccaaggg cctgcggacg 780

catattgata ccattcattgc atccgctacg ttttgccttg ccctgtacat aggagacctg 840

tgtggcgcgg tgatgttggc ttctcaagtc ttcattcatc cgccccagca tcataagttt 900

gtccaggact gcaactgttc catataccca ggccacatca ctggacatcg gatggcg 957

<210> 144

<211> 319

<212> PRT

<213> hepatitis C virus

<400> 144

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Asp Arg Arg Pro Thr Gly Lys Ser Trp Gly Lys Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro  
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val  
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile  
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Val Pro Val Ser Gly Leu  
180 185 190

Gln Val Lys Asn Thr Ser Ser Ser Tyr Met Val Thr Asn Asp Cys Gln  
195 200 205

Asn Ser Ser Ile Val Trp Gln Leu Arg Asp Ala Val Leu His Val Pro  
210 215 220

Gly Cys Val Pro Cys Glu Glu Lys Gly Asn Ile Ser Arg Cys Trp Ile

225                      230                      235                      240

Pro Val Ser Pro Asn Ile Ala Val Ser Gln Pro Gly Ala Leu Thr Lys  
                                  245                      250                      255

Gly Leu Arg Thr His Ile Asp Thr Ile Ile Ala Ser Ala Thr Phe Cys  
                                  260                      265                      270

Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Ala Val Met Leu Ala Ser  
                                  275                      280                      285

Gln Val Phe Ile Ile Ser Pro Gln His His Lys Phe Val Gln Asp Cys  
                                  290                      295                      300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala  
                                  305                      310                      315

<210> 145  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 145  
 ctcaacgggtc acggagagggg acatcagaac tgaggagtcc atataccttg cttgctcttt        60  
 acccgagcag gcacgggactg ccatacactc actgactgag aggcttttacg tgggaggggcc        120  
 catgctaaac agcaaagggc aaacctgcggg atacagacgc tgccgcgccca gcggagtgtt        180  
 caccactagc atgggaaata ccatcacgtg ctacgtgaag gcacaagcag cctgtaaggc        240  
 tgcgggcata attgccccca cgatgctggt gtgcggcgac gatctagttg tcatctcaga        300  
 gagtcagggg accgaggagg acgagcggaa cctacgagcc                      340

<210> 146  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

<400> 146

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu  
   1                      5                      10                      15

Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr  
                                  20                      25                      30

Glu Arg Leu Tyr Val Gly Gly Pro Met Leu Asn Ser Lys Gly Gln Thr  
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met  
 50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Gln Ala Ala Cys Lys Ala  
 65 70 75 80

Ala Gly Ile Ile Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val  
 85 90 95

Val Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg  
 100 105 110

Ala

<210> 147  
 <211> 345  
 <212> DNA  
 <213> hepatitis C virus

<400> 147  
 atgagcacac ttctaaacc acaaagaaa accaaaagaa acaccaaccc cggccacagg 60  
 acgttaagtt cccaggcggc ggtcagatcg ttggtggagt ttacgtgcta ccacgcaggg 120  
 gccccagtt ggggtgtgct gcagtgcgca agacttccga gcggtcgcaa cctcgcagta 180  
 ggcgccaacc catccccagg gcgcgccgaa ccgagggcag gtcctgggct cagccccggg 240  
 acccttggcc cctatatggg aatgagggct gcgggtgggc aggggtggctc ctgtccccgc 300  
 gcggctctcg cccgtcgtgg ggcccaaagt acccccggcg cagga 345

<210> 148  
 <211> 115  
 <212> PRT  
 <213> hepatitis C virus

<400> 148

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
 1 5 10 15

Pro Gly His Arg Thr Leu Ser Ser Gln Ala Ala Val Arg Ser Leu Val  
 20 25 30

Glu Phe Thr Cys Tyr His Ala Gly Ala Pro Ser Trp Val Cys Val Gln  
 35 40 45

Cys Ala Arg Leu Pro Ser Gly Arg Asn Leu Ala Val Gly Ala Asn Pro  
 50 55 60

Ser Pro Gly Arg Ala Glu Pro Arg Ala Gly Pro Gly Leu Ser Pro Gly  
 65 70 75 80

Thr Leu Gly Pro Tyr Met Gly Met Arg Ala Ala Gly Gly Gln Gly Gly  
 85 90 95

Ser Cys Pro Arg Ala Ala Leu Ala Arg Arg Gly Ala Gln Met Thr Pro  
 100 105 110

Gly Ala Gly  
 115

<210> 149  
 <211> 280  
 <212> DNA  
 <213> hepatitis C virus

<400> 149  
 ggccctgtgac ctcaaggacg aggctaggag ggtgataact tcactcacgg agcggcttta 60  
 ctgtggtggt cctatgttca acagcaaggg acaacactgc ggttaccgcc gctgccgtgc 120  
 tagtggggtg ctaccacca gtttcgggaa cacaatcacc tgttacatca aagcaaaggc 180  
 agctaccaaa gctgccggaa ttaaaaatcc atcattcctt gtctgcggag atgacttggt 240  
 cgtgattgct gagagtgcag ggatcgatga ggacagagcg 280

<210> 150  
 <211> 93  
 <212> PRT  
 <213> hepatitis C virus

<400> 150

Ala Cys Asp Leu Lys Asp Glu Ala Arg Arg Val Ile Thr Ser Leu Thr  
 1 5 10 15

Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly Gln His  
 20 25 30

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Phe  
 35 40 45

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Lys Ala Ala Thr Lys Ala  
 50 55 60

Ala Gly Ile Lys Asn Pro Ser Phe Leu Val Cys Gly Asp Asp Leu Val  
 65 70 75 80

Val Ile Ala Glu Ser Ala Gly Ile Asp Glu Asp Arg Ala  
 85 90

<210> 151  
 <211> 499  
 <212> DNA  
 <213> hepatitis C virus

<400> 151  
 atgagcacga atcctaaacc tcaaagaaaa accaaaagaa acaccaaccg tcgcccacag 60  
 gacgtcaagt tcccgggcgg tggtcagatc gttggcggag tttacttggt gccgcgcagg 120  
 ggccctagga tgggtgtgcg cgcgactcgg aagacttcgg aacggtcgca accccgtgga 180  
 cggcgctcagc ctattcccaa ggcgcgccag cccacgggcc ggtcctgggg tcaaccggg 240  
 tacccttggc ccctttacgc caatgagggc ctcgggtggg caggggtggct gctctcccct 300  
 cgaggctctc ggcctaattg gggccccaat gacccccggc gaaaatcgcg taatttgggt 360  
 aaggtcatcg ataccctaac gtgcggattc gccgatctca tggggtatat cccgctcgta 420  
 ggcggcccca ttgggggcgt cgcaagggt ctcgcacacg gtgtgagggt ccttgaggac 480  
 ggggtaaaact atgcaacag 499

<210> 152  
 <211> 166  
 <212> PRT  
 <213> hepatitis C virus

<400> 152

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala



35

40

45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro  
100 105 110

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile  
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp  
145 150 155 160

Gly Val Asn Tyr Ala Thr  
165

<210> 153  
<211> 579  
<212> DNA  
<213> hepatitis C virus

<400> 153  
acgtgcggat tcgccgatct catgggggtac atcccgcctcg taggcggccc cggtgggggc 60  
gtcgcaaggg ctctcgcaca cgggtgtgagg gtccttgagg acggggtaaa ctatccaaca 120  
gggaatttac ccggttgctc tttctctatc tttattcttg ctcttctctc gtgtctgacc 180  
gttcggcct ctgcagttcc ctaccgaaat gcctctggga tttatcatgt taccaatgat 240  
tgcccaaact cttccatagt ctatgaggca gataacctga tcctacacgc acctggttgc 300  
gtgccttggtg tcatgacagg taatgtgagt agatgctggg tccaaattac ccctacactg 360  
tcagccccga gcctcggagc agtcacggct cctcttcgga gagccgttga ctacctagcg 420  
ggaggggctg ccctctgctc cgcgttatac gtaggagacg cgtgtggggc actattcttg 480

gtaggccaaa tgttcaccta taggcctcgc cagcacgcta cggcgcagaa ctgcaactgt 540  
 tccatttaca gtggccatgt taccggccac cggatggcg 579

<210> 154  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus

<400> 154

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly  
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu  
 20 25 30

Glu Asp Gly Val Asn Tyr Pro Thr Gly Asn Leu Pro Gly Cys Ser Phe  
 35 40 45

Ser Ile Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
 50 55 60

Ala Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp  
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His  
 85 90 95

Ala Pro Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys  
 100 105 110

Trp Val Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val  
 115 120 125

Thr Ala Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala  
 130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu  
 145 150 155 160

Val Gly Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln  
 165 170 175

Asn Cys Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met

Ala

<210> 155  
 <211> 579  
 <212> DNA  
 <213> hepatitis C virus

<400> 155  
 acgtgcggat tcgccgacct cgtgggggtac atcccgcctcg taggcggccc cgttgggggc 60  
 gtgcgaaggg ctctcgcaca tgggtgtgagg gttcttgagg acggggtgaa ttatgcaaca 120  
 gggaatctgc ctgggttgctc tttctctatc ttcattcttg cacttctctc gtgcctcact 180  
 gtcccggcct ctgcagttcc ctaccgaaat gcctctggga tctatcatgt caccaatgat 240  
 tgcccaaact cttccatagt ctatgaggca gatgatctga tcctacacgc acctggctgc 300  
 gtgccttggtg tcaggaaaga taatgtgagt aggtgctggg tccaaattac cccacgctg 360  
 tcagccccga gcttcggagc agtcacggct ccccttcgga gagccgttga ttacttggtg 420  
 ggaggggctg cctctgctc cgcgttatac gttggagacg cgtgtggggc actatctttg 480  
 gtaggccaaa tggtcaccta taggcctcgc cagcatgcta cggcgcagga ctgcaactgt 540  
 tccatctaca gtggccacgt caccggccat cagatggca 579

<210> 156  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus

<400> 156

Thr Cys Gly Phe Ala Asp Leu Val Gly Tyr Ile Pro Leu Val Gly Gly  
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu  
 20 25 30

Glu Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
 35 40 45

Ser Ile Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
 50 55 60

Ala Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp  
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Leu Ile Leu His  
85 90 95

Ala Pro Gly Cys Val Pro Cys Val Arg Lys Asp Asn Val Ser Arg Cys  
100 105 110

Trp Val Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Phe Gly Ala Val  
115 120 125

Thr Ala Pro Leu Arg Arg Ala Val Asp Tyr Leu Val Gly Gly Ala Ala  
130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu  
145 150 155 160

Val Gly Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln  
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Gln Met  
180 185 190

Ala

<210> 157  
<211> 530  
<212> DNA  
<213> hepatitis C virus.

<400> 157  
cacctacgac agctctgctg gtggcccagt tactgcggtat tccccaagtg gtcattgaca 60  
tcacgcgagg gagccactgg ggggtcttgt ttgccgccgc atactatgca tcggtggcta 120  
actggaccaa ggtcgtgctg gtcttgtttc tgtttgcagg ggttgatgct actaccaga 180  
tttcggggcg ctccagcgcc caaacgacgt atggcatcgc ctcatttata acccgcgggc 240  
cgcagcagaa actgcagctc ataaatacca acggaagctg gcacatcaac aggaccgccc 300  
ttaattgtaa tgacagcctc cagactgggt tcatagccgg cctcttctac taccataagt 360  
tcaactcttc tggatgcccc gatcggatgg ctagctgtag ggcccttgcc acttttgacc 420  
agggctgggg aactatcagc tatgccaaca tatcgggtcc cagtgatgac aaaccatatt 480

gctggcacta tccccacgg ccgtagcgag tgggtccagc ccaagaggtc

530

<210> 158  
<211> 176  
<212> PRT  
<213> hepatitis C virus

<400> 158

Pro Thr Thr Ala Leu Leu Val Ala Gln Leu Leu Arg Ile Pro Gln Val  
1 5 10 15

Val Ile Asp Ile Ile Ala Gly Ser His Trp Gly Val Leu Phe Ala Ala  
20 25 30

Ala Tyr Tyr Ala Ser Val Ala Asn Trp Thr Lys Val Val Leu Val Leu  
35 40 45

Phe Leu Phe Ala Gly Val Asp Ala Thr Thr Gln Ile Ser Gly Gly Ser  
50 55 60

Ser Ala Gln Thr Thr Tyr Gly Ile Ala Ser Phe Ile Thr Arg Gly Ala  
65 70 75 80

Gln Gln Lys Leu Gln Leu Ile Asn Thr Asn Gly Ser Trp His Ile Asn  
85 90 95

Arg Thr Ala Leu Asn Cys Asn Asp Ser Leu Gln Thr Gly Phe Ile Ala  
100 105 110

Gly Leu Phe Tyr Tyr His Lys Phe Asn Ser Ser Gly Cys Pro Asp Arg  
115 120 125

Met Ala Ser Cys Arg Ala Leu Ala Thr Phe Asp Gln Gly Trp Gly Thr  
130 135 140

Ile Ser Tyr Ala Asn Ile Ser Gly Pro Ser Asp Asp Lys Pro Tyr Cys  
145 150 155 160

Trp His Tyr Pro Pro Arg Pro Cys Gly Val Val Pro Ala Gln Glu Val  
165 170 175

<210> 159  
<211> 340

<212> DNA  
<213> hepatitis C virus

<400> 159  
ctcgaccgtt accgaacatg acataatgac cgaagagtcc atttaccat catgtgactt 60  
gcagcccgag gcacgcgcag caatacggtc actcacccaa cgctctact gtggaggccc 120  
catgtacaac agcaaggggc aacagtgtgg ttatcgaga tgccgcgcca gcggcggttt 180  
caccaccagt atgggcaaca ccatgacgtg ctacatcaag gctttagcct cctgtagagc 240  
cgcaaggctc cgggactgca cgctcctggt gtgtgggtgac gatcttgtgg ccatctgcga 300  
gagccagggg acacacgagg atgaagcaag cctgagagcc 340

<210> 160  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 160

Ser Thr Val Thr Glu His Asp Ile Met Thr Glu Glu Ser Ile Tyr Gln  
1 5 10 15

Ser Cys Asp Leu Gln Pro Glu Ala Arg Ala Ala Ile Arg Ser Leu Thr  
20 25 30

Gln Arg Leu Tyr Cys Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Gln  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met  
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ser Cys Arg Ala  
65 70 75 80

Ala Arg Leu Arg Asp Cys Thr Leu Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Ala Ile Cys Glu Ser Gln Gly Thr His Glu Asp Glu Ala Ser Leu Arg  
100 105 110

Ala

<210> 161

<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 161  
ctcaaccgcc accgaacatg acatattgac tgaagagtcc atataccaat catgtgactc 60  
gcagcccgcac gcacgcgcag caatacggtc actcacccaa cgcttggtct gtggaggccc 120  
catgtataac agcaaggggc aacaatgtgg ttatcgcaga tgccgcgcca gcggcgtctt 180  
caccaccagt atgggcaaca ccatgacgtg ctacattaag gctttagcct cctgtagaac 240  
cgctgggctc cgggactaca cgctcctggt gtgtggtgac gatcatgtgg ccatctgcga 300  
gagccagggg acacacgagg atgaagcgaa cctgagagcc 340

<210> 162  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 162

Ser Thr Ala Thr Glu His Asp Ile Leu Thr Glu Glu Ser Ile Tyr Gln  
1 5 10 15

Ser Cys Asp Ser Gln Pro Asp Ala Arg Ala Ala Ile Arg Ser Leu Thr  
20 25 30

Gln Arg Leu Phe Cys Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Gln  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met  
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ser Cys Arg Thr  
65 70 75 80

Ala Gly Leu Arg Asp Tyr Thr Leu Leu Val Cys Gly Asp Asp His Val  
85 90 95

Ala Ile Cys Glu Ser Gln Gly Thr His Glu Asp Glu Ala Asn Leu Arg  
100 105 110

Ala

<210> 163  
 <211> 499  
 <212> DNA  
 <213> hepatitis C virus

<400> 163  
 atgagcacga atcctaaact tcaaagaaaa accaaacgta acaccaaccg ccgccccatg 60  
 gacgttaagt tcccgggtgg tggccagatc gttggcggag tttacttggt gccgcgcagg 120  
 ggccctaggt tgggtgtgcg cgcgactcgg aagacttcgg agcggtcgca acctcgtggg 180  
 aggcgccaac ctatcccaa ggcgcgccga tccgagggca gatcctgggc gcagcccggg 240  
 tatecttggc ccctttacgg caatgagggc tgtgggtggg caggggtggct cctgtcccct 300  
 cgcgggtctc ggccgtcttg gggccctaata gatccccggc ggaggtcccg caacctgggt 360  
 aaggatcatc ataccctaac atgcggcttc gccgacctca tgggatacat cccgcttgta 420  
 ggcgcccccg tgggtggcgt cgcagagacc ctggcacacg gtgttagggc tgtggaagac 480  
 gggatcaact acgcaacag 499

<210> 164  
 <211> 166  
 <212> PRT  
 <213> hepatitis C virus

<400> 164

Met Ser Thr Asn Pro Lys Leu Gln Arg Lys Thr Lys Arg Asn Thr Asn  
 1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly  
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro



100

105

110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Val  
 130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val Glu Asp  
 145 150 155 160

Gly Ile Asn Tyr Ala Thr  
 165

<210> 165  
 <211> 499  
 <212> DNA  
 <213> hepatitis C virus

<220>  
 <221> misc\_feature  
 <222> (306)..(306)  
 <223> "n" is any nucleotide

<220>  
 <221> misc\_feature  
 <222> (313)..(313)  
 <223> "n" is any nucleotide

<220>  
 <221> misc\_feature  
 <222> (340)..(340)  
 <223> "n" is any nucleotide

<400> 165  
 atgagcacga atcctaaacc tcaaagaaaa accaaacgta acaccaaccg ccgcacctatg 60  
 gacgttaagt tcccaggcgg tggtcagatc gttggcggag tttacttggt gccgcgcagg 120  
 ggccccaggt tgggtgtgcg cgcgactcgg aagacttcgg agcggtcgca acctcgtggg 180  
 aggcgccaac ctatcccca ggcgcgccga accgagggca gatcctgggc gcagccccggg 240  
 tatccttggc ccctttacgg caatgagggc tgtgggtggg caggggtggt cctgtccct 300  
 cgcggncttc ggnctgtctt gggccccaat gatccccggn ggagatcccg caacttgggt 360  
 aaggtcatcg ataccctaac atgcggcttc gccgacctca tgggatacat cccgcttgta 420

ggcgcccccg tgggtggcgt cgccagggcc ctggcacatg gtgttagggc tgtggaagac 480  
 gggatcaatt atgcaacag 499

<210> 166  
 <211> 126  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (102)..(102)  
 <223> "Xaa" is any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (105)..(105)  
 <223> "Xaa" is any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (114)..(114)  
 <223> "Xaa" is any amino acid

<400> 166

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
 1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Ala Arg Arg Thr Glu Gly Arg Ser Trp Ala Gln Pro Gly  
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
 85 90 95

Leu Leu Ser Pro Arg Xaa Ser Arg Xaa Ser Trp Gly Pro Asn Asp Pro  
 100 105 110

Arg Xaa Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu  
 115 120 125

<210> 167  
 <211> 579  
 <212> DNA  
 <213> hepatitis C virus

<400> 167  
 acatgaggct tcgccgacct catgggatac atcccgttg taggcgcccc cgtgggtggc 60  
 gtcgccaggg ccctggcaca tgggtgttagg gctgtggaag acgggatcaa ttatgcaaca 120  
 gggaaccttc ccggttgctc cttttctatc ttcctcttgg cgctcctctc gtgcctgact 180  
 gttcccatcat cggccgttaa ctatcgcaat gtttcgggca tttatcacat caccaatgac 240  
 tgcccgaatg caagcatagt gtacgagacc gaaaatcaca tcttacacct cccagggtgc 300  
 gtaccctgtg tgaggactgg gaaccagtcg cgggtgttggg tggccctcac tcccacagta 360  
 gcgtcgccat acgccggtgc tccgcttgag cccttgccggc gtcattgtgga cctgatggta 420  
 ggtgctgcca ccatgtgttc cgccctctac atcggcgact tgtgcggtgg cttattcttg 480  
 gtgggcaaaa tgttcacctt ccaaccgga cgctactgga ccactcagga ctgcaattgt 540  
 tccatctaca cgggccacat tacgggtcat cggatggca 579

<210> 168  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus

<400> 168

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
 35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser  
 50 55 60

Ala Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp  
 65 70 75 80

Cys Pro Asn Ala Ser Ile Val Tyr Glu Thr Glu Asn His Ile Leu His  
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys  
100 105 110

Trp Val Ala Leu Thr Pro Thr Val Ala Ser Pro Tyr Ala Gly Ala Pro  
115 120 125

Leu Glu Pro Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr  
130 135 140

Met Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu  
145 150 155 160

Val Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln  
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met  
180 185 190

Ala

<210> 169  
<211> 579  
<212> DNA  
<213> hepatitis C virus

<400> 169  
acatgcggct tcgccgacct catgggatac atcccgcttg taggcgcccc cgtgggtggc 60  
gtcgccagag ccctggcaca cgggtgttagg gctgtggaag acgggatcaa ctacgcaaca 120  
gggaatctcc ccggttgctc cttttctatc ttctcttgg cacttctctc gtgcctcact 180  
gttcccgctg cgggcgttaa ctatcgcaat gttcggggcg tttatcacat caccaacgac 240  
tgcccgaatg cgagcatagt gtacgagacc gacaatcaca tcttacacct cccaggggtgc 300  
gtaccctgtg tgaagaccgg gaaccagtcg cgggtgttggg tggccctcac tcccacagtg 360  
gcgtcgcctt acgtcgggtg tccgctcgag cccttgcggc gccatgtgga cctgatggta 420  
gggtgctgcca ccgtgtgctc cgccctctac gtcggcgacc tgtcgggtgg cttattcttg 480  
gtaggccaaa tgttcacctt ccaaccgca cgccactgga cgaccagga ctgtaattgt 540

tccatctacg cagggcatat tacgggccat cggatggct

579

<210> 170  
<211> 193  
<212> PRT  
<213> hepatitis C virus

<400> 170

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
50 55 60

Gly Val Asn Tyr Arg Asn Ala Ser Gly Val Tyr His Ile Thr Asn Asp  
65 70 75 80

Cys Pro Asn Ala Ser Ile Val Tyr Glu Thr Asp Asn His Ile Leu His  
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Lys Thr Gly Asn Gln Ser Arg Cys  
100 105 110

Trp Val Ala Leu Thr Pro Thr Val Ala Ser Pro Tyr Val Gly Ala Pro  
115 120 125

Leu Glu Pro Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr  
130 135 140

Val Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Leu Phe Leu  
145 150 155 160

Val Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln  
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Arg Met  
180 185 190

Ala

<210> 171  
<211> 579  
<212> DNA  
<213> hepatitis C virus

<400> 171  
acatgcggtc tcgccgacct catgggatac atcccgttg tgggcgcccc tggtggtggc 60  
gtcgccagag cccttgcgca cggcgtcagg gctgtggaag acgggattaa ctatgcaaca 120  
gggaaccttc ctggttgctc cttttctatc ttctttctgg cactttcttc gtgcctgact 180  
gtccccgcct cggctgtgca ttatcacaac acctcgggca tctaccacct caccaatgac 240  
tgccctaact ctagcatagt ctttgaggca gtccatcaca tcttgcacct tccaggatgc 300  
gtcccttggtg taagaactgg gaaccagtct cgggtgctggg tagccttgac cccacgctg 360  
gccgcgccat accttggcgc tccactcgag tccatgcggc gtcacgtgga tttgatgggtg 420  
ggcactgcta cattgtgctc agcactctac gttggggacc tgtgcggggg catattccta 480  
gcggggcaga tggtcacctt ccggccccgc ctccattgga ccacccagga gtgcaattgt 540  
tccacctatc cgggccacat cacgggtcat agaatggcg 579

<210> 172  
<211> 193  
<212> PRT  
<213> hepatitis C virus

<400> 172

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
50 55 60

Ala Val His Tyr His Asn Thr Ser Gly Ile Tyr His Leu Thr Asn Asp

65

70

75

80

Cys Pro Asn Ser Ser Ile Val Phe Glu Ala Val His His Ile Leu His  
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys  
100 105 110

Trp Val Ala Leu Thr Pro Thr Leu Ala Ala Pro Tyr Leu Gly Ala Pro  
115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Thr Ala Thr  
130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Ile Phe Leu  
145 150 155 160

Ala Gly Gln Met Phe Thr Phe Arg Pro Arg Leu His Trp Thr Thr Gln  
165 170 175

Glu Cys Asn Cys Ser Thr Tyr Pro Gly His Ile Thr Gly His Arg Met  
180 185 190

Ala

&lt;210&gt; 173

&lt;211&gt; 579

&lt;212&gt; DNA

&lt;213&gt; hepatitis C virus

&lt;400&gt; 173

acgtgcgggtt cgcgcgacct catgggatac atcccgcctcg taggcgcccc tgtgggtggc 60

gtcgccaggg ccttggcgca tggcgtcagg gctgtggagg acgggataaa ctatgcaaca 120

gggaaccttc ctggttgctc tttttctatc ttccttctgg cacttctctc gtgcctgact 180

gtccccgcct cagctgtgca ttatcacaac acctcgggca tctatcacat cactaatgac 240

tgccctaact ctagcatagt ctttgaggca gagcatcaca tcttgcatct tccaggatgc 300

gtcccctgtg tgagaactgg gaaccagtca cgatgctgga tagccttgac ccctacgttg 360

gccgcgccac acattggcgc tccacttgag tccatgcgac gtcagtgtgga tttgatggta 420

ggcactgcca cattgtgctc cgcactctac attggagatc tgtgcggagg catatttcta 480

gtgggccaga tgttcaactt caggccccgc ctgcactgga ccaccagga gtgcaattgt 540  
 tccatctatc caggccacat cacgggtcac agaatggcg 579

<210> 174  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus

<400> 174

Thr Cys Gly Ser Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
 35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
 50 55 60

Ala Val His Tyr His Asn Thr Ser Gly Ile Tyr His Ile Thr Asn Asp  
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Phe Glu Ala Glu His His Ile Leu His  
 85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys  
 100 105 110

Trp Ile Ala Leu Thr Pro Thr Leu Ala Ala Pro His Ile Gly Ala Pro  
 115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Thr Ala Thr  
 130 135 140

Leu Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Ile Phe Leu  
 145 150 155 160

Val Gly Gln Met Phe Asn Phe Arg Pro Arg Leu His Trp Thr Thr Gln  
 165 170 175

Glu Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met



Ala

<210> 175  
 <211> 579  
 <212> DNA  
 <213> hepatitis C virus

<400> 175  
 acgtgctggc ttgccgacct catgggatac atcccgtctg tgggcgcccc tgtgggtggc 60  
 gtgcgcaggg ccttggcaca tgggtgtcagg gccgtggagg acgggattaa ctatgcaaca 120  
 gggaatcttc ccggttgtct cttttctatc ttctttctag cacttctctc gtgcttgact 180  
 gtcccggcct cggcgcagca ctaccggaac atctcgggca tttatcacgt caccaatgac 240  
 tgcccgaact ctagtatagt gtatgaagct gaccatcata tcatgcatct accaggggtg 300  
 gtgccttgcg tgagaaccgg gaacacctcg cgctgctggg ttcttttaac acccactgtg 360  
 gctgccccct atgttggcgc gccgtctgaa tccatgcggc ggcacgtgga cttaatgggtg 420  
 ggtgccgcca ccgtctgtct ggccctgtac atcggagacc ttgctggagg tgtcttctctg 480  
 gtccgggcaga tgttcacctt ccggccgcgc cgccattgga ctaccagga ctgcaactgc 540  
 tctatctatg atggccacat caccggccat agaatggct 579

<210> 176  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus

<400> 176  
 Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
 1 5 10 15  
 Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
 20 25 30  
 Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
 35 40 45  
 Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
 50 55 60

Ala Gln His Tyr Arg Asn Ile Ser Gly Ile Tyr His Val Thr Asn Asp  
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His  
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Thr Ser Arg Cys  
100 105 110

Trp Val Pro Leu Thr Pro Thr Val Ala Ala Pro Tyr Val Gly Ala Pro  
115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr  
130 135 140

Val Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu  
145 150 155 160

Val Gly Gln Met Phe Thr Phe Arg Pro Arg Arg His Trp Thr Thr Gln  
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Asp Gly His Ile Thr Gly His Arg Met  
180 185 190

Ala

<210> 177  
<211> 579  
<212> DNA  
<213> hepatitis C virus

<400> 177  
acgtgcgggt tcgccgacct catgggatac atcccgctcg tgggcgctcc agtaggaggc 60  
gtcgccagag ccttggcgca tggcgtcagg gctgtggagg acgggatcaa ttacgcaaca 120  
gggaaccttc ccggtgctc cttttctatc ttctcttgg tacttctctc ggcctaact 180  
gtcccagcgt ctgctcagca ctaccggaat gcacgggca tctaccatgt caccaacgac 240  
tgcccgaact ccagtattgt gtatgaagcc gaccatcaca tcatgcacct acccgggtgt 300  
gtgccctgtg taagaactgg gaatgtctcg cgttgctgga ttctttaac acccactgta 360  
gccgtcccct acctcggggc tccacttacg tctgtacggc agcatgtgga cctgatggtg 420  
ggggcggcca ccttatgctc tgccctctac atcggagacc attgcggagg tgtcttcttg 480

gcagggcaga tggtcagttt ccaaccccg gctcattgga ctaccagga ttgcaactgt 540  
 tccatctatg tgggccacat caccggccac aggatggcc 579

<210> 178  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus  
 <400> 178

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
 35 40 45

Ser Ile Phe Leu Leu Val Leu Leu Ser Arg Leu Thr Val Pro Ala Ser  
 50 55 60

Ala Gln His Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp  
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His  
 85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Val Ser Arg Cys  
 100 105 110

Trp Ile Pro Leu Thr Pro Thr Val Ala Val Pro Tyr Leu Gly Ala Pro  
 115 120 125

Leu Thr Ser Val Arg Gln His Val Asp Leu Met Val Gly Ala Ala Thr  
 130 135 140

Leu Cys Ser Ala Leu Tyr Ile Gly Asp His Cys Gly Gly Val Phe Leu  
 145 150 155 160

Ala Gly Gln Met Val Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln  
 165 170 175

Asp Cys Asn Cys Ser Ile Tyr Val Gly His Ile Thr Gly His Arg Met  
 180 185 190

Ala

<210> 179  
 <211> 579  
 <212> DNA  
 <213> hepatitis C virus  
 <220>  
 <221> misc\_feature  
 <222> (568)..(579)  
 <223> "n" is any nucleotide

<400> 179  
 acctgaggct tcgccgacct catgggatac atcccgcctcg taggcgcccc cgtgggagggc 60  
 gtcgccagar ctctggcgca tggcgtcagg gctctggaag acgggatcaa ttatgcaaca 120  
 gggaatcttc ctggttgctc tttctctatc tcccttcttg aacttctctc gtgcctgact 180  
 gttcccgct cagccatcca ctatcgcaat gcttcggacg gttattatat caccaatgat 240  
 tgcccgaact ctagcatagt gtatgaagcc gagaaccaca tcttgcacct tccgggggtgt 300  
 ataccctgtg tgaagaccgg gaatcagtcg cgggtgctggg tggctctcac cccacgctg 360  
 gcggcccccac acctacgtgc tccgctttcg tccttacggg cgcattgtgga cctaattggtg 420  
 ggggcccga cggcatgctc cgctttttac attggagatc tgtgcggggg tgtgtttttg 480  
 gcggggccaac tgttcactat ccggccacgc attcatgaaa ccactcagga ctgcaattgc 540  
 tccatctact cagggcacat cacgggtnnn nnnnnnnnn 579

<210> 180  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (24)..(24)  
 <223> "Xaa" is any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (190)..(193)  
 <223> "Xaa" is any amino acid

<400> 180

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
1 5 10 15

Pro Val Gly Gly Val Ala Arg Xaa Leu Ala His Gly Val Arg Ala Leu  
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
35 40 45

Ser Ile Ser Leu Leu Glu Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
50 55 60

Ala Ile His Tyr Arg Asn Ala Ser Asp Gly Tyr Tyr Ile Thr Asn Asp  
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Glu Asn His Ile Leu His  
85 90 95

Leu Pro Gly Cys Ile Pro Cys Val Lys Thr Gly Asn Gln Ser Arg Cys  
100 105 110

Trp Val Ala Leu Thr Pro Thr Leu Ala Ala Pro His Leu Arg Ala Pro  
115 120 125

Leu Ser Ser Leu Arg Ala His Val Asp Leu Met Val Gly Ala Ala Thr  
130 135 140

Ala Cys Ser Ala Phe Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu  
145 150 155 160

Ala Gly Gln Leu Phe Thr Ile Arg Pro Arg Ile His Glu Thr Thr Gln  
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ser Gly His Ile Thr Gly Xaa Xaa Xaa  
180 185 190

Xaa

<210> 181

<211> 579

<212> DNA  
<213> hepatitis C virus

<220>  
<221> misc\_feature  
<222> (152)..(152)  
<223> "n" is any nucleotide

<400> 181  
gcgtgcggtc tcgccgatct catgggatac atcccgtctg taggcgcccc cgtgggtggc 60  
gtcgccagag ccctggcgca cgggtgttagg gctgtggagg acgggattaa ctacgcaaca 120  
gggaatcttc ctgggtgctc tttctctatc tnccttctgg cacttctctc gtgcctgact 180  
gtcccggcct cggctcagca ctaccggaat gtctcgggca tctaccacgt caccaatgat 240  
tgcccgaatt ccagcatagt gtatgaagcc gatcaccaca tcatgcactt accaggggtgc 300  
ataccctgcg tgaggaccgg gaacgtttcg cgctgctggg tatctctgac acctactgtg 360  
gctgctccct acctcggggc tccgcttacg tcgctacggc ggcatgtgga tttgatgggtg 420  
ggtgcagcca ccctttgctc tgccctctac gtcggagacc tctgtggagg tgtcttccta 480  
gtgggacaga tgttcacctt ccagccgcgc cgccactgga ccactcagga ctgcaactgc 540  
tccatttacg tcggccacat cacaggccac agaatggct 579

<210> 182  
<211> 193  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (51)..(51)  
<223> "Xaa" is any amino acid

<400> 182

Ala Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
35 40 45

Ser Ile Xaa Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser

50

55

60

Ala Gln His Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp  
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His  
85 90 95

Leu Pro Gly Cys Ile Pro Cys Val Arg Thr Gly Asn Val Ser Arg Cys  
100 105 110

Trp Val Ser Leu Thr Pro Thr Val Ala Ala Pro Tyr Leu Gly Ala Pro  
115 120 125

Leu Thr Ser Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr  
130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Val Phe Leu  
145 150 155 160

Val Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln  
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Val Gly His Ile Thr Gly His Arg Met  
180 185 190

Ala

<210> 183  
<211> 579  
<212> DNA  
<213> hepatitis C virus

<400> 183  
acctgagggt ttgccgacct catgggatac atcccgctcg taggcgcccc tgtgggtggc 60  
gtcgccaggg ccctagaaca cgggtgtagg gctgtggagg acggtattaa ttatgcaaca 120  
gggaatctcc ccggttgctc tttttctatc tccctcttgg cacttctttc gtgcctgact 180  
gttccccacct cagccgtcaa ctatcgcaac gcctcggggc tctatcatat caccaatgac 240  
tgcccggaatt cgagcatagt gtacgaggct gactaccaca tctacacct ccctgggtgc 300  
ttaccctgcg tgagggttgg gaatcagtca cgctgctggg tggcccttac tcccaccgtg 360

gcggcgccctt acgttggtgc tccgctagaa tccctccgga gtcattgtgga tctgatggta 420  
 ggtgctgcta ctgtgtgctc cgctctttac atcggggacc tgtgcggtgg cgtatttttg 480  
 gttggtcaga tgttttcttt ccagccgga cgccactgga ccacgcagga ctgcaattgt 540  
 tctatctacg cggggcacgt tacgggccac aggatggca 579

<210> 184  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus

<400> 184

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
 35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser  
 50 55 60

Ala Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp  
 65 70 75 80

Cys Pro Asn Ala Ser Ile Val Tyr Glu Thr Glu Asn His Ile Leu His  
 85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys  
 100 105 110

Trp Val Ala Leu Thr Pro Thr Val Ala Ser Pro Tyr Ala Gly Ala Pro  
 115 120 125

Leu Glu Pro Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr  
 130 135 140

Met Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu  
 145 150 155 160

Val Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln



165

170

175

Asp Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met  
 180 185 190

Ala

<210> 185  
 <211> 579  
 <212> DNA  
 <213> hepatitis C virus

<400> 185  
 attgcggtt ttgccgacct catgggatac atcccgtctg taggcgcccc cgtgggtggc 60  
 gtcgccagag ccctggaaca tgggtgtagg gctgtggagg acggcatcaa ttatgcaaca 120  
 gggaaatctcc cgggttgctc tttctctatc tacctcttgg cacttctctc gtgcctgact 180  
 gttcccacct cggccatcca ctatcgcaat gcctcgggcg tctaccacgt caccaatgac 240  
 tgcccgaact cgagcatagt gtacgaggcc gaccaccaca tcctacacct tccagggtgc 300  
 ttaccctgtg tgagggttgg gaatcagtca cgttgttggg tggccctctc tcccaccgtg 360  
 gcggcgctt acatcggtgc tccagttgaa tccttccgga gacacgtgga catgatggtg 420  
 ggcgctgcta ctgtgtgctc cgctctctat attggggact tgtgtggtgg cgtattcttg 480  
 gttggtcaga tgttttcttt ccggccacga cgccactgga ctacgcagga ctgcaattgt 540  
 tccatctacg cggggcacat cactggccac ggaatggca 579

<210> 186  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus

&lt;400&gt; 186

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Glu His Gly Val Arg Ala Val  
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
 35 40 45

Ser Ile Tyr Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser  
 50 55 60

Ala Ile His Tyr Arg Asn Ala Ser Gly Val Tyr His Val Thr Asn Asp  
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His  
 85 90 95

Leu Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys  
 100 105 110

Trp Val Ala Leu Ser Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro  
 115 120 125

Val Glu Ser Phe Arg Arg His Val Asp Met Met Val Gly Ala Ala Thr  
 130 135 140

Val Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu  
 145 150 155 160

Val Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln  
 165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Gly Met  
 180 185 190

Ala

<210> 187  
 <211> 579  
 <212> DNA  
 <213> hepatitis C virus

<400> 187  
 acttgcggtt ttgcgacct catgggatac atcccgctcg taggcgcccc tgtgggtggc 60  
 gtcgccaggg ccctggcaca cgggtgtagg gctgtggagg acgggatcaa ttatgcgaca 120  
 gggaatcttc ccggttgctc tttctctatc ttctcttgg cacttctttc gtgcctgact 180  
 gttcccacct cggcogtcaa ctatcgcaat gcctcgggca tctatcacat caccaatgac 240  
 tgcccgaact cgagcatagt gtacgagacc gagcaccaca tcctacacct cccaggggtg 300  
 ttaccctgcg tgagggttgg gaatcagtca cgctgctggg tggccctcac tcccaccgtg 360

gcgggcgctt acatcgggcg tccgcttgaa tccctccgga gtcattgtgga tctgatggta 420  
 ggtgccgcta ctgcgtgctc cgctctttac atcgagagacc tgtgcggtgg cgtatttttg 480  
 gttggtcaga tgttctcttt ccagccgchg cgccactgga ctacgcagga ctgcaattgt 540  
 tccatctacg cggggcacgt tacggggccac aggatggca 579

<210> 188  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus

<400> 188

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
 35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser  
 50 55 60

Ala Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp  
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Thr Glu His His Ile Leu His  
 85 90 95

Leu Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys  
 100 105 110

Trp Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro  
 115 120 125

Leu Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr  
 130 135 140

Ala Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu  
 145 150 155 160

Val Gly Gln Met Phe Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln  
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ala Gly His Val Thr Gly His Arg Met  
180 185 190

Ala

<210> 189  
<211> 579  
<212> DNA  
<213> hepatitis C virus

<400> 189  
acgtgcggct tcgccgacct catgggatac atcccgctcg tgggcgcccc cgttgggggc 60  
gtcgccaggg ccctggcgca tggcgtcagg gctgtggagg acgggattaa ctatgcgaca 120  
gggaatcttc ccggttgctc tttctctatc ttcctcctgg cacttctttc gtgcctcact 180  
gtcccagcgt cagctgagca ctaccggaat gcttcgggca tctatcacat caccaatgac 240  
tgtccgaatt ccagcgtagt ctatgaaact gaccaccata tattgcactt gccgggggtgc 300  
gtaccttgcg tgagggcccg gaacgtgtct cgttgcgtga cgccggtaac acctacggtg 360  
gctgccgtat ccatggacgc tccgctcgag tccttcctggc ggcatgtgga cctaattgga 420  
ggtgccggcca ccgtgtgttc tgtcctctat gttggagacc tctgtggagg tgctttccta 480  
gtggggcaga tgttcacctt ccagccgctg cgccactgga ccacgcagga ttgtaattgc 540  
tccatctata ctggccatat caccggccac aggatggcg 579

<210> 190  
<211> 193  
<212> PRT  
<213> hepatitis C virus

<400> 190

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala  
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val  
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
 50 55 60

Ala Glu His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp  
 65 70 75 80

Cys Pro Asn Ser Ser Val Val Tyr Glu Thr Asp His His Ile Leu His  
 85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Ala Gly Asn Val Ser Arg Cys  
 100 105 110

Trp Thr Pro Val Thr Pro Thr Val Ala Ala Val Ser Met Asp Ala Pro  
 115 120 125

Leu Glu Ser Phe Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr  
 130 135 140

Val Cys Ser Val Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu  
 145 150 155 160

Val Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln  
 165 170 175

Asp Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met  
 180 185 190

Ala

<210> 191  
 <211> 289  
 <212> DNA  
 <213> hepatitis C virus

<400> 191  
 atgagcacga atcctaaacc tcaaagaaaa accaaacgta acaccaaccg ccgccccatg 60  
 gacgttaagt tcccggggcg tggccagatc gttggtggag ttacttggt gccgcgcagg 120  
 ggccccaggt tgggtgtgcg cgcgactagg aagacttcgg agcggtcgca acctcgtggg 180  
 agacgtcagc ctatcccca ggcacgtcga tctgagggaa ggtcctgggc tcagcccggg 240  
 taccatggc ctctttacgg taatgagggg tgtgggtggg caggatggg 289

<210> 192  
 <211> 96  
 <212> PRT  
 <213> hepatitis C virus

<400> 192

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
 1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
 50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly  
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
 85 90 95

<210> 193  
 <211> 498  
 <212> DNA  
 <213> hepatitis C virus

<400> 193

atgagcacga atcctaaacc tcaaagaaaa accaaacgta acaccaaccg ccgccctatg 60  
 gacgtaaagt tcccggggcg tggacagatc gttggcgagg tttacttggt gccgcgcagg 120  
 ggcccccggt tgggtgtgcg cgcgactcgg aagacttcgg agcggtcgca acctcgtggc 180  
 aggcgtcaac ctatccccaa ggcgcgcggg tccgagggca ggtcctgggc gcaagccggg 240  
 tacccttggc ccctctatgg caatgagggc tgtgggtggg caggggtggct cctgtctcct 300  
 cgcggtcttc ggccatcttg gggcccaa at gatccccggc ggagatcgcg caatctgggt 360  
 aaggtcatcg ataccctgac gtgcgggttc gccgacctca tgggatacat cccgctcgtg 420  
 ggcgcccccg tcggggggcg cgccagggcc ctggcgcgat gcgtcagggc tgtggaggac 480  
 gggattaact atcgacag 498

<210> 194  
<211> 166  
<212> PRT  
<213> hepatitis C virus

<400> 194

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn  
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly  
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala  
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro  
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Ala Gly  
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp  
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro  
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys  
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Val  
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val Glu Asp  
145 150 155 160

Gly Ile Asn Tyr Arg Gln  
165

<210> 195  
<211> 579  
<212> DNA  
<213> hepatitis C virus

<400> 195

acgtgcggaat tcgccgacct cgtgggggtac atcccgcctcg taggcggccc cgttgggggc 60  
 gtcgcaaggg ctctcgaca tgggtgtgagg gttcttgagg acggggtgaa ttatgcaaca 120  
 gggaatctgc ctggttgctc tttctctatc ttcattcttg cacttctctc gtgcctcact 180  
 gtcccggcct ctgcagttcc ctaccgaaat gcctctggga tctatcatgt caccaatgat 240  
 tgcccaaact cttccatagt ctatgaggca gatgatctga tcctacacgc acctggctgc 300  
 gtgccttggtg tcaggaaaga taatgtgagt aggtgctggg tccaaattac cccacgctg 360  
 tcagccccga gcttcggagc agtcacggct ccccttcgga gagccgttga ttacttggtg 420  
 ggaggggctg ccctctgctc cgcgttatac gttggagacg cgtgtggggc actatctttg 480  
 gtaggccaaa tgttcaccta taggcctcgc cagcatgcta cgggtgcagga ctgcaactgt 540  
 tccatctaca gtggccacgt caccggccat cagatggca 579

<210> 196  
 <211> 193  
 <212> PRT  
 <213> hepatitis C virus

<400> 196

Thr Cys Gly Phe Ala Asp Leu Val Gly Tyr Ile Pro Leu Val Gly Gly  
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu  
 20 25 30

Glu Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe  
 35 40 45

Ser Ile Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser  
 50 55 60

Ala Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp  
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Leu Ile Leu His  
 85 90 95

Ala Pro Gly Cys Val Pro Cys Val Arg Lys Asp Asn Val Ser Arg Cys  
 100 105 110

Trp Val Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Phe Gly Ala Val



115

120

125

Thr Ala Pro Leu Arg Arg Ala Val Asp Tyr Leu Val Gly Gly Ala Ala  
 130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu  
 145 150 155 160

Val Gly Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln  
 165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Gln Met  
 180 185 190

Ala

<210> 197  
 <211> 1485  
 <212> DNA  
 <213> hepatitis C virus

<220>  
 <221> misc\_feature  
 <222> (787)..(787)  
 <223> "n" is any nucleotide

<220>  
 <221> misc\_feature  
 <222> (1011)..(1011)  
 <223> "n" is any nucleotide

<220>  
 <221> misc\_feature  
 <222> (1444)..(1444)  
 <223> "n" is any nucleotide

<400> 197  
 tgtgccagga ccatcaccac cggagcttct atcacatact ccacttacgg caagttcctt 60  
 gctgatggag ggtgttcagg cggcgcgcac gacgtgatca tatgcgacga gtgccattcc 120  
 caggacgcca ccaacattct tgggataggc actgtccttg accaggcaga gacggctgga 180  
 gctaggctcg tcgtcttggc cacggccacc cctcccggca gtgtgacaac gccccacccc 240  
 aacatcgagg aagtggcct gcctcaggag ggggaggttc ccttctacgg cagagccatt 300

```

cccccttgctt ttataaaggg tggtaggcat ctcatcttct gccattccaa gaaaaaatgt 360
gatgaactcg ccaagcaact gaccagcctg ggcgtgaacg ccgtggcata ttatagaggt 420
ctagacgtcg ccgtcatacc cacaacagga gacgtggctg tgtgcagcac cgacgcgctc 480
atgacgggat tcaccggcga ctttgattct gtcatagact gcaactccgc cgtcactcag 540
acggtggact tcagtctgga tcccactttt accattgaga ctaccacagt gccccaggac 600
gcagtgtcca gaagccagcg ttggggccgc acggggagag gtaggcacgg catataccgg 660
tatgtctcgg ctggagagag accgtctggc atgttcgact ccgtggtgct ctgtgagtgc 720
tacgatgccg gatgtgcatg gtacgatctg actcctgccg agactaccgt gaggttgccg 780
gcttacntaa acacccccgg gctccctgtc tgtcaggacc atttggaatt ctgggagggg 840
gtgttcacgg ggctcactaa catcgacgt ccatgctgtt cacagaccaa acagggtggg 900
gagaatttcc cataccttgt agcgtaccaa gcaacagtct gtgttcgcgc gaaagcgccc 960
ccccccagct gggacacaat gtggaaatgc atgctccgtc tcaaaccgac nttactggc 1020
cctactcccc tcttgtagag gctggggccc gtccagaatg agatcacact gacgcacccc 1080
atcaccaagt acattatggc ttgcatgtct gcggacttgg aggtcattac cagcacttgg 1140
gttctggtgg ggggcgttgt ggcggccctg gcggcctact gcttgacggt gggttcggta 1200
gccatagtcg gtaggatcat cctctctggg aaacctgcc aattccccga tagggaggtg 1260
ttataaccagc aatttgatga gatggaggag tgctcggcct cgttgcccta tatggacgaa 1320
acacgtgcc a ttgccggaca attcaaagag aaagtgctcg gcttcacag cacgaccggc 1380
cagaaggctg aaactctgaa gccggcagcc acgtctgtgt ggaacaaggc tgagcagttc 1440
tgnccacat acatgtggaa cttcatcagt gggatacaat aatag 1485

```

```

<210> 198
<211> 484
<212> PRT
<213> hepatitis C virus

```

```

<220>
<221> MISC_FEATURE
<222> (263)..(263)
<223> "Xaa" is any amino acid

```

```

<220>
<221> MISC_FEATURE
<222> (337)..(337)
<223> "Xaa" is any amino acid

```

<220>  
 <221> MISC\_FEATURE  
 <222> (482)..(482)  
 <223> "Xaa" is any amino acid

<400> 198

Cys Ala Arg Thr Ile Thr Thr Gly Ala Ser Ile Thr Tyr Ser Thr Tyr  
 1 5 10 15

Gly Lys Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala His Asp Val  
 20 25 30

Ile Ile Cys Asp Glu Cys His Ser Gln Asp Ala Thr Thr Ile Leu Gly  
 35 40 45

Ile Gly Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val  
 50 55 60

Val Leu Ala Thr Ala Thr Pro Pro Gly Ser Val Thr Thr Pro His Pro  
 65 70 75 80

Asn Ile Glu Glu Val Ala Leu Pro Gln Glu Gly Glu Val Pro Phe Tyr  
 85 90 95

Gly Arg Ala Ile Pro Leu Ala Phe Ile Lys Gly Gly Arg His Leu Ile  
 100 105 110

Phe Cys His Ser Lys Lys Lys Cys Asp Glu Leu Ala Lys Gln Leu Thr  
 115 120 125

Ser Leu Gly Val Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ala  
 130 135 140

Val Ile Pro Thr Thr Gly Asp Val Val Val Cys Ser Thr Asp Ala Leu  
 145 150 155 160

Met Thr Gly Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Ser  
 165 170 175

Ala Val Thr Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile  
 180 185 190

Glu Thr Thr Thr Val Pro Gln Asp Ala Val Ser Arg Ser Gln Arg Trp  
195 200 205

Gly Arg Thr Gly Arg Gly Arg His Gly Ile Tyr Arg Tyr Val Ser Ala  
210 215 220

Gly Glu Arg Pro Ser Gly Met Phe Asp Ser Val Val Leu Cys Glu Cys  
225 230 235 240

Tyr Asp Ala Gly Cys Ala Trp Tyr Asp Leu Thr Pro Ala Glu Thr Thr  
245 250 255

Val Arg Leu Arg Ala Tyr Xaa Asn Thr Pro Gly Leu Pro Val Cys Gln  
260 265 270

Asp His Leu Glu Phe Trp Glu Gly Val Phe Thr Gly Leu Thr Asn Ile  
275 280 285

Asp Ala His Met Leu Ser Gln Thr Lys Gln Gly Gly Glu Asn Phe Pro  
290 295 300

Tyr Leu Val Ala Tyr Gln Ala Thr Val Cys Val Arg Ala Lys Ala Pro  
305 310 315 320

Pro Pro Ser Trp Asp Thr Met Trp Lys Cys Met Leu Arg Leu Lys Pro  
325 330 335

Xaa Leu Thr Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Pro Val Gln  
340 345 350

Asn Glu Ile Thr Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala Cys  
355 360 365

Met Ser Ala Asp Leu Glu Val Ile Thr Ser Thr Trp Val Leu Val Gly  
370 375 380

Gly Val Val Ala Ala Leu Ala Ala Tyr Cys Leu Thr Val Gly Ser Val  
385 390 395 400

Ala Ile Val Gly Arg Ile Ile Leu Ser Gly Lys Pro Ala Ile Ile Pro  
405 410 415

Asp Arg Glu Val Leu Tyr Gln Gln Phe Asp Glu Met Glu Glu Cys Ser

420

425

430

Ala Ser Leu Pro Tyr Met Asp Glu Thr Arg Ala Ile Ala Gly Gln Phe  
 435 440 445

Lys Glu Lys Val Leu Gly Phe Ile Ser Thr Thr Gly Gln Lys Ala Glu  
 450 455 460

Thr Leu Lys Pro Ala Ala Thr Ser Val Trp Asn Lys Ala Glu Gln Phe  
 465 470 475 480

Trp Xaa Thr Tyr

<210> 199  
 <211> 1485  
 <212> DNA  
 <213> hepatitis C virus

<220>  
 <221> misc\_feature  
 <222> (684)..(684)  
 <223> "n" is any nucleotide

<220>  
 <221> misc\_feature  
 <222> (909)..(909)  
 <223> "n" is any nucleotide

<220>  
 <221> misc\_feature  
 <222> (1058)..(1058)  
 <223> "n" is any nucleotide

<220>  
 <221> misc\_feature  
 <222> (1133)..(1133)  
 <223> "n" is any nucleotide

<400> 199  
 tgtgccagga ccataccac cggagcttct atcacatact ccacttacgg caagttcctt 60  
 gctgatggag ggtgttcagg cggcgcgtat gacgtgatca tatgcgacga gtgccattcc 120  
 caggacgcca ccaccattct tgggataggc actgtccttg accaggcaga gacggctgga 180  
 gctaggctcg tcgtcttggc cacggccacc cctcccggca gtgtgacaac gccccacccc 240

aacatcgagg aagtggccct gcctcaggag ggggagggttc ctttctacgg cagagccatt	300
cccccttgctt ttataaaggg tggtaggcat ctcatcttct gccattccaa gaaaaaatgt	360
gatgaactcg ccaagcaact gaccagcctg ggcgtgaacg ccgtggcata ttatagaggt	420
ctagacgtcg ccgtcatccc cacagcagga gacgtggtcg tgtgcagcac cgacgcgctc	480
atgacgggat tcaccggcga ctttgattct gtcatagact gcaactccgc cgtcactcag	540
acggtggact tcagtctgga tcccactttt accattgaga ctaccacagt gccccaggac	600
gcagtgtcca gaagccagcg taggggccgc acggggagag gtaggcacgg catataccgg	660
tatgtctcgg ctggagagag accntctgac atgttcgact ccgtgggtgct ctgtgagtgc	720
tacgatgccg gatgtgctg gtatgatctg actcctgccg agactaccgt gaggttgccg	780
gcttacataa acacccccgg gctccctgtc tgtcaggacc atttggaatt ctgggagggg	840
gtgttcacgg ggctcactaa catcgacgt cacatgctgt cacagaccaa acaggggtgg	900
gagaatttnc cataccttgt agcgtaccaa gcaacagtct gtgttcgccc gaaagcgccc	960
ccccccagct gggacacaat gtggaaatgc atgctccgtc tcaaaccgac tttaactggc	1020
cctactcccc tcttgtagag gctggggccc gtccagantg agatcacact gacgcacccc	1080
atcaccaagt acattatggc ttgcatgtct gcggacttgg aggtcattac cancacttgg	1140
gttctgggtgg ggggcgttgt ggcggccctg gcggcctact gcttgacggt gggttcggta	1200
gccatagtcg gtaggatcat cctctctggg aaacctgcc aattccccga tagggaggca	1260
ttataaccagc aatttgatga gatggaggag tgctcggcct cgttgcccta tatggacgag	1320
acacgtgcc aattgcggaca attcaaagag aaagtgctcg gcttcatcag cacgaccggc	1380
cagaaggctg aaactctgaa gccggcagcc acgtctgtgt ggaacaaggc tgagcagttc	1440
tgggccacat acatgtggaa cttcatcagc gggatacaat aatag	1485

<210> 200  
 <211> 484  
 <212> PRT  
 <213> hepatitis C virus

<220>  
 <221> MISC\_FEATURE  
 <222> (228)..(228)  
 <223> "Xaa" is any amino acid

<220>  
 <221> MISC\_FEATURE  
 <222> (303)..(303)

<223> "Xaa" is any amino acid

<220>

<221> MISC\_FEATURE

<222> (353)..(353)

<223> "Xaa" is any amino acid

<220>

<221> MISC\_FEATURE

<222> (378)..(378)

<223> "Xaa" is any amino acid

<400> 200

Cys Ala Arg Thr Ile Thr Thr Gly Ala Ser Ile Thr Tyr Ser Thr Tyr  
1 5 10 15

Gly Lys Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Val  
20 25 30

Ile Ile Cys Asp Glu Cys His Ser Gln Asp Ala Thr Thr Ile Leu Gly  
35 40 45

Ile Gly Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val  
50 55 60

Val Leu Ala Thr Ala Thr Pro Pro Gly Ser Val Thr Thr Pro His Pro  
65 70 75 80

Asn Ile Glu Glu Val Ala Leu Pro Gln Glu Gly Glu Val Pro Phe Tyr  
85 90 95

Gly Arg Ala Ile Pro Leu Ala Phe Ile Lys Gly Gly Arg His Leu Ile  
100 105 110

Phe Cys His Ser Lys Lys Lys Cys Asp Glu Leu Ala Lys Gln Leu Thr  
115 120 125

Ser Leu Gly Val Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ala  
130 135 140

Val Ile Pro Thr Ala Gly Asp Val Val Val Cys Ser Thr Asp Ala Leu  
145 150 155 160

Met Thr Gly Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Ser  
165 170 175

Ala Val Thr Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile  
180 185 190

Glu Thr Thr Thr Val Pro Gln Asp Ala Val Ser Arg Ser Gln Arg Arg  
195 200 205

Gly Arg Thr Gly Arg Gly Arg His Gly Ile Tyr Arg Tyr Val Ser Ala  
210 215 220

Gly Glu Arg Xaa Ser Asp Met Phe Asp Ser Val Val Leu Cys Glu Cys  
225 230 235 240

Tyr Asp Ala Gly Cys Ala Trp Tyr Asp Leu Thr Pro Ala Glu Thr Thr  
245 250 255

Val Arg Leu Arg Ala Tyr Ile Asn Thr Pro Gly Leu Pro Val Cys Gln  
260 265 270

Asp His Leu Glu Phe Trp Glu Gly Val Phe Thr Gly Leu Thr Asn Ile  
275 280 285

Asp Ala His Met Leu Ser Gln Thr Lys Gln Gly Gly Glu Asn Xaa Pro  
290 295 300

Tyr Leu Val Ala Tyr Gln Ala Thr Val Cys Val Arg Ala Lys Ala Pro  
305 310 315 320

Pro Pro Ser Trp Asp Thr Met Trp Lys Cys Met Leu Arg Leu Lys Pro  
325 330 335

Thr Leu Thr Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Pro Val Gln  
340 345 350

Xaa Glu Ile Thr Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala Cys  
355 360 365

Met Ser Ala Asp Leu Glu Val Ile Thr Xaa Thr Trp Val Leu Val Gly  
370 375 380

Gly Val Val Ala Ala Leu Ala Ala Tyr Cys Leu Thr Val Gly Ser Val



385

390

395

400

Ala Ile Val Gly Arg Ile Ile Leu Ser Gly Lys Pro Ala Ile Ile Pro  
 405 410 415

Asp Arg Glu Ala Leu Tyr Gln Gln Phe Asp Glu Met Glu Glu Cys Ser  
 420 425 430

Ala Ser Leu Pro Tyr Met Asp Glu Thr Arg Ala Ile Ala Gly Gln Phe  
 435 440 445

Lys Glu Lys Val Leu Gly Phe Ile Ser Thr Thr Gly Gln Lys Ala Glu  
 450 455 460

Thr Leu Lys Pro Ala Ala Thr Ser Val Trp Asn Lys Ala Glu Gln Phe  
 465 470 475 480

Trp Ala Thr Tyr

<210> 201  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 201  
 ctccactgtg actgagagag acatcagggt cgaagaagaa gtctatcagt gttgtgatct 60  
 ggagcccagag gcccgcaagg taataaccgc cctcacggag agactctacg tgggcggccc 120  
 tatgtacaat agcaaggag acctttgcgg gtatcgagg tgccgcgcaa gcggcgata 180  
 taccaccagc ttcgggaaca cactgacgtg ctacctaaa gcctcagcag ccatcagggc 240  
 tgcggggctg aaggactgca ccatgctggt ttgcggtgac gacttagtcg tgatcgctga 300  
 aagcgggtggc gtcgaggagg acaagcgagc cctcggagct 340

<210> 202  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

<400> 202

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Val Tyr Gln  
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr  
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu  
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala  
 65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
 85 90 95

Val Ile Ala Glu Ser Gly Gly Val Glu Glu Asp Lys Arg Ala Leu Gly  
 100 105 110

Ala

<210> 203  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 203  
 ctccacagtg actgaaagag acatcagggt cgaggaagag gtctaccagt gttgtgacct 60  
 ggagcctgaa acccgcaagg taatatctgc cctcactgaa agactctatg tgggcgggtcc 120  
 catgcacaac agcaggggag acctatgcgg gtaccgtaga tgccgcgcga gcggcggtata 180  
 caccacaagc ttcggaaca ctctgacgtg cttcctcaag gccacagcgg ccaccaaagc 240  
 cgctggccta aaggactgca ccatgttggt gtgtggtgac gacttagtcg ttatcgccga 300  
 aagcgatggt gtcgaagagg accgccgagc cctcggagct 340

<210> 204  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

<400> 204

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Val Tyr Gln  
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Thr Arg Lys Val Ile Ser Ala Leu Thr  
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Arg Gly Asp Leu  
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
 50 55 60

Gly Asn Thr Leu Thr Cys Phe Leu Lys Ala Thr Ala Ala Thr Lys Ala  
 65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
 85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Arg Arg Ala Leu Gly  
 100 105 110

Ala

<210> 205  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 205  
 ctccacggtg accgaaaggg atatcaggac cgaggaagag atctaccagt gctgcgacct 60  
 ggagcccgaa gcccgcaagg tgatatccgc cctaacggaa agactctacg tgggcggtcc 120  
 catgtacaac tccaaggggg acctatgcgg gcaacggagg tgccgcgcaa gcgggggtcta 180  
 caccaccagc ttcgggaaca ctgtaacgtg ttatctcaag gccgttgagg ctactagggc 240  
 cgcaggtctg aaaggttgca gcatgctggt ttgtggagac gacttagtcg tcactctgca 300  
 gagcggcggc gtagaggagg atgcaagagc cctccgagcc 340

<210> 206  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

<400> 206

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Glu Ile Tyr Gln  
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ala Leu Thr  
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu  
 35 40 45

Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
 50 55 60

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Val Ala Ala Thr Arg Ala  
 65 70 75 80

Ala Gly Leu Lys Gly Cys Ser Met Leu Val Cys Gly Asp Asp Leu Val  
 85 90 95

Val Ile Cys Glu Ser Gly Gly Val Glu Glu Asp Ala Arg Ala Leu Arg  
 100 105 110

Ala

<210> 207  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 207  
 ctccacggtg actgaaaggg acattagggt cgaggaagag atctaccagt gctgtgacct 60  
 ggagcccgag gcacgcaagg tgatatccgc tctcacagaa agactctaca agggcggccc 120  
 catgtataac agcaaggggg acctatgcgg gcttcggagg tgccgcgcaa gcgggggtata 180  
 caccacaagc ttcgggaaca cggtgacatg ctaccttaaa gccacagcag ccaccagggc 240  
 tgcaggggctg aaagattgca ctatgctggt atgcggtgac gacttagtcg ttattgccga 300  
 aagcgggtggc gtggaggagg acgcccagag cctccgagcc 340

<210> 208  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

<400> 208

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln

1

5

10

15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ala Leu Thr  
20 25 30

Glu Arg Leu Tyr Lys Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu  
35 40 45

Cys Gly Leu Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
50 55 60

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala  
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ala Glu Ser Gly Gly Val Glu Glu Asp Ala Arg Ala Leu Arg  
100 105 110

Ala

<210> 209  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<220>  
<221> misc\_feature  
<222> (13)..(13)  
<223> "n" is any nucleotide

<220>  
<221> misc\_feature  
<222> (23)..(23)  
<223> "n" is any nucleotide

<220>  
<221> misc\_feature  
<222> (65)..(65)  
<223> "n" is any nucleotide

<220>  
<221> misc\_feature  
<222> (72)..(72)

<223> "n" is any nucleotide

<220>

<221> misc\_feature

<222> (277)..(277)

<223> "n" is any nucleotide

<220>

<221> misc\_feature

<222> (337)..(337)

<223> "n" is any nucleotide

<400> 209

ccccaccgtg acngagaggg acntcagggt cgaggaagag gtctatcagt gctgtaatct 60

ggagnccgat gnccgcaagg tcatcaacgc cctcacagag agactctacg tgggcggccc 120

tatgcacaac agcaagggag acctgtgtgg catccgtaga tgccgcgcga gcggcggttta 180

caccacgagc ttcggaaca cgctgacttg ctacctcaa gccacagcgg ccaccagggc 240

cgcgggcttg aaggattgca ccatgctggt ctgcgngac gacctggttg tcattgctga 300

gagcattggc atagacgagg acaagcaagc cctccgnact 340

<210> 210

<211> 113

<212> PRT

<213> hepatitis C virus

<220>

<221> MISC\_FEATURE

<222> (8)..(8)

<223> "Xaa" is any amino acid

<220>

<221> MISC\_FEATURE

<222> (22)..(22)

<223> "Xaa" is any amino acid

<220>

<221> MISC\_FEATURE

<222> (24)..(24)

<223> "Xaa" is any amino acid

<400> 210

Pro Thr Val Thr Glu Arg Asp Xaa Arg Val Glu Glu Glu Val Tyr Gln  
1 5 10 15

Cys Cys Asn Leu Glu Xaa Asp Xaa Arg Lys Val Ile Asn Ala Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu  
35 40 45

Cys Gly Ile Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe  
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala  
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ala Glu Ser Ile Gly Ile Asp Glu Asp Lys Gln Ala Leu Arg  
100 105 110

Thr

<210> 211  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<220>  
<221> misc\_feature  
<222> (11)..(11)  
<223> "n" is any nucleotide

<220>  
<221> misc\_feature  
<222> (327)..(327)  
<223> "n" is any nucleotide

<220>  
<221> misc\_feature  
<222> (333)..(334)  
<223> "n" is any nucleotide

<220>  
<221> misc\_feature  
<222> (340)..(340)  
<223> "n" is any nucleotide

<400> 211  
ctcgactgtg nccgagaggg acatcaggac agagggagag gtctatcagt gttgcgacct 60  
ggaaccggaa gcccgcaagg taatcacccg cctcactgag agactctatg tgggcggacc 120  
catgttcaac agcaagggag acctgtgcgg acaacgccgg tgccgcgcaa gcggcgtgtt 180  
caccaccagc ttcgggaaca cactgacgtg ctaccttaaa gccacagctg ctactagagc 240  
agccggctta aaagattgca ccatgctggt ctgcggtgac gacttagtcg ttatttccga 300  
gagcgccggt gtggaggagg atcccanaac ccnncgaccn 340

<210> 212  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<220>  
<221> MISC\_FEATURE  
<222> (4)..(4)  
<223> "Xaa" is any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (109)..(109)  
<223> "Xaa" is any amino acid

<220>  
<221> MISC\_FEATURE  
<222> (111)..(111)  
<223> "Xaa" is any amino acid

<400> 212  
Ser Thr Val Xaa Glu Arg Asp Ile Arg Thr Glu Gly Glu Val Tyr Gln  
1 5 10 15  
Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr  
20 25 30  
Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Asp Leu  
35 40 45  
Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Phe  
50 55 60  
Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala



65

70

75

80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Ser Glu Ser Ala Gly Val Glu Glu Asp Pro Xaa Thr Xaa Arg  
100 105 110

Pro

<210> 213  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 213  
ctcaacagtc accgagaacg acatccgtgt tgaggagtca atttaccat gttgtgactt 60  
ggcccccgag gccagacagg ccataaagtc gctcacagag cggctttata tcgggggtcc 120  
cctgactaat tcaaaggggc agaactgtgg ctatcgccga tgccgcgcaa gcggcgtgct 180  
gacgaccagc tgcggtaata cccttacatg ttacctaaag gcctctgcag cctgtcgagc 240  
tgcaagctc caggactgca cgatgctcgt gtgcggggac gaccttgtcg ttatctgtga 300  
aagcgcggga acccaagagg acgcggcgag cctacgagtc 340

<210> 214  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 214

Ser Thr Val Thr Glu Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln  
1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Gln Ala Ile Lys Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Ile Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys  
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Cys Arg Ala  
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Ile Cys Glu Ser Ala Gly Thr Gln Glu Asp Ala Ala Ser Leu Arg  
100 105 110

Val

<210> 215  
<211> 340  
<212> DNA  
<213> hepatitis C virus

<400> 215  
ctcaaccgtc acggagaggg atataagaac agaagaatcc atatatcaag cttgttccct 60  
gcccgaagag gccagaactg tcatacactc gctcaccgag agactctacg tgggagggcc 120  
catgataaac agcaaagggc aatcctgctg ttacaggcgt tgccgcgcaa gcggtgtttt 180  
caccaccagc atgggggaata ccatgacgtg ttacatcaaa gcccttgcag cgtgtaaagc 240  
cgcagggatc gtggaccccg tcatgctggt gtgtggagac gacctgggtc tcatctcgga 300  
gagccagggt aacgaggagg acgagcgaaa cctgagagct 340

<210> 216  
<211> 113  
<212> PRT  
<213> hepatitis C virus

<400> 216

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln  
1 5 10 15

Ala Cys Ser Leu Pro Gln Glu Ala Arg Thr Val Ile His Ser Leu Thr  
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Ile Asn Ser Lys Gly Gln Ser  
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met  
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ala Cys Lys Ala  
 65 70 75 80

Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val  
 85 90 95

Val Ile Ser Glu Ser Gln Gly Asn Glu Glu Asp Glu Arg Asn Leu Arg  
 100 105 110

Ala

<210> 217  
 <211> 340  
 <212> DNA  
 <213> hepatitis C virus

<400> 217  
 ctcgactgtc actgaacagg acatcagggt ggaagaggag atatatcaat gctgcaacct 60  
 tgaaccggag gccaggaaag tgatctcttc cctcacggag cggctttact gcggaggccc 120  
 tatgtttaac agcaaggggg cccagtgtgg ttatcgccgt tgccgtgcca gtggagttct 180  
 gcctaccagc tttggcaaca caatcacttg ttacatcaag gccacaacgg ccgcgaaggc 240  
 cgcaggcctc cggaaccggg actttcttgt ctgcggagat gatctggtcg tggtaggctga 300  
 gagtgatggc gtcgacgagg atagagcagc cctgagagcc 340

<210> 218  
 <211> 113  
 <212> PRT  
 <213> hepatitis C virus

<400> 218

Ser Thr Val Thr Glu Gln Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln  
 1 5 10 15

Cys Cys Asn Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ser Leu Thr  
 20 25 30

Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly Ala Gln  
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Phe  
 50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Thr Ala Ala Lys Ala  
65 70 75 80

Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp Leu Val  
85 90 95

Val Val Ala Glu Ser Asp Gly Val Asp Glu Asp Arg Ala Ala Leu Arg  
100 105 110

Ala

<210> 219  
<211> 10  
<212> PRT  
<213> hepatitis C virus

<400> 219

Arg Ser Glu Gly Arg Thr Ser Trp Ala Gln  
1 5 10

<210> 220  
<211> 10  
<212> PRT  
<213> hepatitis C virus

<400> 220

Arg Ser Glu Gly Arg Thr Ser Trp Ala Gln  
1 5 10

<210> 221  
<211> 10  
<212> PRT  
<213> hepatitis C virus

<400> 221

Arg Thr Glu Gly Arg Thr Ser Trp Ala Gln  
1 5 10

<210> 222  
<211> 629  
<212> DNA  
<213> hepatitis C virus

<400> 222

tagacttttg	ggagagcgtc	ttcactggac	taactcacat	agatgccac	tttctgtcac	60
agactaagca	gcagggactc	aacttctcgt	tctgactgc	ctaccaagcc	actgtgtgcg	120
ctcgcgcgca	ggctcctccc	ccaagtggg	acgagatgtg	gaagtgtctc	gtacggctta	180
agccaacact	acatggacct	acgcctcttc	tatatcggtt	ggggcctgtc	caaaatgaaa	240
tctgcttgac	acaccccatc	acaaaataca	tcatggcatg	catgtcagct	gatctggaag	300
taaccaccag	cacctgggtt	ttgcttggag	gggtcctcgc	ggccctagcg	gcctactgct	360
tgtcagtcgg	ttgtgttggtg	attgtgggtc	atatcgagct	ggggggcaag	ccggcaatcg	420
ttccagacaa	agaggtgttg	tatcaacaat	acgatgagat	ggaagagtgc	tcacaagctg	480
ccccatatat	cgaacaagct	caggtaatag	ctcaccagtt	caaggaaaaa	gtccttggat	540
tgctgcagcg	agccacccaa	caacaagctg	tcattgagcc	catagtaact	accaactggc	600
aaaagcttga	ggccttttgg	cacaagcat				629

<210> 223  
 <211> 209  
 <212> PRT  
 <213> hepatitis C virus

<400> 223

Asp	Phe	Trp	Glu	Ser	Val	Phe	Thr	Gly	Leu	Thr	His	Ile	Asp	Ala	His
1				5					10					15	

Phe	Leu	Ser	Gln	Thr	Lys	Gln	Gln	Gly	Leu	Asn	Phe	Ser	Phe	Leu	Thr
		20						25					30		

Ala	Tyr	Gln	Ala	Thr	Val	Cys	Ala	Arg	Ala	Gln	Ala	Pro	Pro	Pro	Ser
		35					40						45		

Trp	Asp	Glu	Met	Trp	Lys	Cys	Leu	Val	Arg	Leu	Lys	Pro	Thr	Leu	His
	50					55					60				

Gly	Pro	Thr	Pro	Leu	Leu	Tyr	Arg	Leu	Gly	Pro	Val	Gln	Asn	Glu	Ile
65					70					75				80	

Cys	Leu	Thr	His	Pro	Ile	Thr	Lys	Tyr	Ile	Met	Ala	Cys	Met	Ser	Ala
				85					90					95	

Asp	Leu	Glu	Val	Thr	Thr	Ser	Thr	Trp	Val	Leu	Leu	Gly	Gly	Val	Leu
								100				105		110	

Ala Ala Leu Ala Ala Tyr Cys Leu Ser Val Gly Cys Val Val Ile Val  
115 120 125

Gly His Ile Glu Leu Gly Gly Lys Pro Ala Ile Val Pro Asp Lys Glu  
130 135 140

Val Leu Tyr Gln Gln Tyr Asp Glu Met Glu Glu Cys Ser Gln Ala Ala  
145 150 155 160

Pro Tyr Ile Glu Gln Ala Gln Val Ile Ala His Gln Phe Lys Glu Lys  
165 170 175

Val Leu Gly Leu Leu Gln Arg Ala Thr Gln Gln Gln Ala Val Ile Glu  
180 185 190

Pro Ile Val Thr Thr Asn Trp Gln Lys Leu Glu Ala Phe Trp His Lys  
195 200 205

His

<210> 224  
<211> 12  
<212> PRT  
<213> hepatitis C virus

<400> 224

Ile His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile  
1 5 10

<210> 225  
<211> 12  
<212> PRT  
<213> hepatitis C virus

<400> 225

Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile  
1 5 10

<210> 226  
<211> 12  
<212> PRT  
<213> hepatitis C virus

<400> 226

Val Asn Tyr Arg Asn Ala Ser Gly Val Tyr His Ile  
1 5 10

<210> 227  
<211> 12  
<212> PRT  
<213> hepatitis C virus

<400> 227

Val Asn Tyr His Asn Thr Ser Gly Ile Tyr His Leu  
1 5 10

<210> 228  
<211> 12  
<212> PRT  
<213> hepatitis C virus

<400> 228

Gln His Tyr Arg Asn Ala Ser Gly Ile Tyr His Val  
1 5 10

<210> 229  
<211> 12  
<212> PRT  
<213> hepatitis C virus

<400> 229

Gln His Tyr Arg Asn Val Ser Gly Ile Tyr His Val  
1 5 10

<210> 230  
<211> 12  
<212> PRT  
<213> hepatitis C virus

<400> 230

Ile His Tyr Arg Asn Ala Ser Asp Gly Tyr Tyr Ile  
1 5 10

<210> 231  
<211> 12  
<212> PRT  
<213> hepatitis C virus

<400> 231

Leu Gln Val Lys Asn Thr Ser Ser Ser Tyr Met Val

1 5 10

<210> 232  
<211> 11  
<212> PRT  
<213> hepatitis C virus

<400> 232

Val Trp Gln Leu Arg Ala Ile Val Leu His Val  
1 5 10

<210> 233  
<211> 11  
<212> PRT  
<213> hepatitis C virus

<400> 233

Val Tyr Glu Ala Asp Tyr His Ile Leu His Leu  
1 5 10

<210> 234  
<211> 11  
<212> PRT  
<213> hepatitis C virus

<400> 234

Val Tyr Glu Thr Asp Asn His Ile Leu His Leu  
1 5 10

<210> 235  
<211> 11  
<212> PRT  
<213> hepatitis C virus

<400> 235

Val Tyr Glu Thr Glu Asn His Ile Leu His Leu  
1 5 10

<210> 236  
<211> 11  
<212> PRT  
<213> hepatitis C virus

<400> 236

Val Phe Glu Thr Val His His Ile Leu His Leu  
1 5 10



<210> 237  
<211> 11  
<212> PRT  
<213> hepatitis C virus

<400> 237

Val Phe Glu Thr Glu His His Ile Leu His Leu  
1 5 10

<210> 238  
<211> 11  
<212> PRT  
<213> hepatitis C virus

<400> 238

Val Phe Glu Thr Asp His His Ile Met His Leu  
1 5 10

<210> 239  
<211> 11  
<212> PRT  
<213> hepatitis C virus

<400> 239

Val Tyr Glu Thr Glu Asn His Ile Leu His Leu  
1 5 10

<210> 240  
<211> 11  
<212> PRT  
<213> hepatitis C virus

<400> 240

Val Tyr Glu Ala Asp Ala Leu Ile Leu His Ala  
1 5 10

<210> 241  
<211> 13  
<212> PRT  
<213> hepatitis C virus

<400> 241

Val Gln Asp Gly Asn Thr Ser Ala Cys Trp Thr Pro Val  
1 5 10

<210> 242

<211> 13  
<212> PRT  
<213> hepatitis C virus

<400> 242

Val Lys Thr Gly Asn Gln Ser Arg Cys Trp Val Ala Leu  
1 5 10

<210> 243  
<211> 13  
<212> PRT  
<213> hepatitis C virus

<400> 243

Val Lys Thr Gly Asn Gln Ser Arg Cys Trp Val Ala Leu  
1 5 10

<210> 244  
<211> 13  
<212> PRT  
<213> hepatitis C virus

<400> 244

Val Arg Thr Gly Asn Gln Ser Arg Cys Trp Val Ala Leu  
1 5 10

<210> 245  
<211> 13  
<212> PRT  
<213> hepatitis C virus

<400> 245

Val Lys Thr Gly Asn Gln Ser Arg Cys Trp Ile Ala Leu  
1 5 10

<210> 246  
<211> 13  
<212> PRT  
<213> hepatitis C virus

<400> 246

Val Lys Thr Gly Asn Gln Ser Arg Cys Trp Ile Ala Leu  
1 5 10

<210> 247  
<211> 13  
<212> PRT

<213> hepatitis C virus

<400> 247

Val Lys Thr Gly Asn Ser Val Arg Cys Trp Ile Pro Leu  
1 5 10

<210> 248

<211> 13

<212> PRT

<213> hepatitis C virus

<400> 248

Val Lys Thr Gly Asn Val Ser Arg Cys Trp Ile Ser Leu  
1 5 10

<210> 249

<211> 13

<212> PRT

<213> hepatitis C virus

<400> 249

Val Arg Lys Asp Asn Val Ser Arg Cys Trp Val Gln Ile  
1 5 10

<210> 250

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 250

Ala Pro Ser Phe Gly Ala Val Thr Ala Pro  
1 5 10

<210> 251

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 251

Val Ser Gln Pro Gly Ala Leu Thr Lys Gly  
1 5 10

<210> 252

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 252

Val Lys Tyr Val Gly Ala Thr Thr Ala Ser  
1 5 10

<210> 253

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 253

Ala Pro Tyr Ile Gly Ala Pro Val Glu Ser  
1 5 10

<210> 254

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 254

Ala Gln His Leu Asn Ala Pro Leu Glu Ser  
1 5 10

<210> 255

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 255

Ser Pro Tyr Val Gly Ala Pro Leu Glu Pro  
1 5 10

<210> 256

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 256

Ser Pro Tyr Ala Gly Ala Pro Leu Glu Pro  
1 5 10

<210> 257

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 257

Ala Pro Tyr Leu Gly Ala Pro Leu Glu Ser  
1 5 10

<210> 258  
<211> 10  
<212> PRT  
<213> hepatitis C virus  
  
<400> 258

Ala Pro Tyr Leu Gly Ala Pro Leu Glu Ser  
1 5 10

<210> 259  
<211> 10  
<212> PRT  
<213> hepatitis C virus  
  
<400> 259

Ala Pro Tyr Val Gly Ala Pro Leu Glu Ser  
1 5 10

<210> 260  
<211> 11  
<212> PRT  
<213> hepatitis C virus  
  
<400> 260

Asn Val Pro Tyr Leu Gly Ala Pro Leu Thr Ser  
1 5 10

<210> 261  
<211> 10  
<212> PRT  
<213> hepatitis C virus  
  
<400> 261

Ala Pro His Leu Arg Ala Pro Leu Ser Ser  
1 5 10

<210> 262  
<211> 10  
<212> PRT  
<213> hepatitis C virus  
  
<400> 262

Ala Pro Tyr Leu Gly Ala Pro Leu Thr Ser  
1 5 10

<210> 263  
<211> 10  
<212> PRT  
<213> hepatitis C virus

<400> 263

Arg Pro Arg Gln His Ala Thr Val Gln Asp  
1 5 10

<210> 264  
<211> 10  
<212> PRT  
<213> hepatitis C virus

<400> 264

Ser Pro Gln His His Lys Phe Val Gln Asp  
1 5 10

<210> 265  
<211> 10  
<212> PRT  
<213> hepatitis C virus

<400> 265

Arg Pro Arg Arg Leu Trp Thr Thr Gln Glu  
1 5 10

<210> 266  
<211> 10  
<212> PRT  
<213> hepatitis C virus

<400> 266

Pro Pro Arg Ile His Glu Thr Thr Gln Asp  
1 5 10

<210> 267  
<211> 14  
<212> PRT  
<213> hepatitis C virus

<400> 267

Thr Ile Ser Tyr Ala Asn Gly Ser Gly Pro Ser Asp Asp Lys  
1 5 10

<210> 268  
 <211> 19  
 <212> PRT  
 <213> hepatitis C virus

<400> 268

Ser Arg Arg Gln Pro Ile Pro Arg Ala Arg Arg Thr Glu Gly Arg Ser  
 1 5 10 15

Trp Ala Gln

<210> 269  
 <211> 1443  
 <212> DNA  
 <213> hepatitis C virus

<400> 269  
 accatcacca ccggagcttc tatcacatac tccacttacg gcaagttcct tgctgatgga 60  
 ggggtgttcag gcggcgcgta tgacgtgatc atatgcgacg agtgccattc ccaggacgcc 120  
 accaccattc ttgggatagg cactgtcctt gaccaggcag agacggctgg agctaggctc 180  
 gtcgtcttgg ccacggccac ccctcccggc agtgtgacaa cgccccaccc caacatcgag 240  
 gaagtggccc tgcctcagga gggggagggt cccttctacg gcagagccat tccccttgct 300  
 ttataaaagg gtggtaggca tctcatcttc tgccattcca agaaaaaatg tgatgaactc 360  
 gccaaagcaac tgaccagcct gggcgtgaac gccgtggcat attatagagg tctagacgtc 420  
 gccgtcatcc ccacagcagg agacgtggtc gtgtgcagca ccgacgcgct catgacggga 480  
 ttcaccggcg actttgattc tgtcatagac tgcaactccg ccgtcactca gacggtggac 540  
 ttcagtctgg atcccacttt taccattgag actaccacag tgccccagga cgcagtgtcc 600  
 agaagccagc gtagggggccg cacggggaga ggtaggcacg gcatataccg gtatgtctcg 660  
 gctggagaga gaccgtctga catgttcgac tccgtggtgc tctgtgagtg ctacgatgcc 720  
 ggatgtgcgt ggtatgatct gactcctgcc gagactaccg tgagggttgcg cgcttacata 780  
 aacacccccg ggctccctgt ctgtcaggac catttggaat tctgggaggg ggtgttcacg 840  
 gggctcacta acatcgacgc tcacatgctg tcacagacca aacagggtgg ggagaatttc 900  
 ccataccttg tagcgtacca agcaacagtc tgtgttcgcg cgaaagcgcc cccccccagc 960  
 tgggacacaa tgtggaaatg catgctccgt ctcaaaccga ctttaactgg ccctactccc 1020  
 ctcttgtaga ggctggggcc cgtccagaat gagatcacac tgacgcaccc catcaccaag 1080

tacattatgg cttgcatgtc tgcggacttg gaggtcatta ccagcacttg ggttctggtg 1140  
 gggggcggtt tggcggccct ggcggcctac tgcttgacgg tgggttcggt agccatagtc 1200  
 ggtaggatca tcctctctgg gaaacctgcc atcattcccg atagggaggc attataccag 1260  
 caatttgatg agatggagga gtgctcggcc tcgttgccct atatggacga gacacgtgcc 1320  
 attgccggac aattcaaaga gaaagtgtc gggttcacatca gcacgaccgg ccagaaggct 1380  
 gaaactctga agccggcagc cacgtctgtg tggaacaagg ctgagcagtt ctgggccaca 1440  
 tac 1443

<210> 270  
 <211> 481  
 <212> PRT  
 <213> hepatitis C virus

<400> 270

Thr Ile Thr Thr Gly Ala Ser Ile Thr Tyr Ser Thr Tyr Gly Lys Phe  
 1 5 10 15

Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Val Ile Ile Cys  
 20 25 30

Asp Glu Cys His Ser Gln Asp Ala Thr Thr Ile Leu Gly Ile Gly Thr  
 35 40 45

Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val Leu Ala  
 50 55 60

Thr Ala Thr Pro Pro Gly Ser Val Thr Thr Pro His Pro Asn Ile Glu  
 65 70 75 80

Glu Val Ala Leu Pro Gln Glu Gly Glu Val Pro Phe Tyr Gly Arg Ala  
 85 90 95

Ile Pro Leu Ala Phe Ile Lys Gly Gly Arg His Leu Ile Phe Cys His  
 100 105 110

Ser Lys Lys Lys Cys Asp Glu Leu Ala Lys Gln Leu Thr Ser Leu Gly  
 115 120 125

Val Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ala Val Ile Pro  
 130 135 140



Thr Ala Gly Asp Val Val Val Cys Ser Thr Asp Ala Leu Met Thr Gly  
145 150 155 160

Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Ser Ala Val Thr  
165 170 175

Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr  
180 185 190

Thr Val Pro Gln Asp Ala Val Ser Arg Ser Gln Arg Arg Gly Arg Thr  
195 200 205

Gly Arg Gly Arg His Gly Ile Tyr Arg Tyr Val Ser Ala Gly Glu Arg  
210 215 220

Pro Ser Asp Met Phe Asp Ser Val Val Leu Cys Glu Cys Tyr Asp Ala  
225 230 235 240

Gly Cys Ala Trp Tyr Asp Leu Thr Pro Ala Glu Thr Thr Val Arg Leu  
245 250 255

Arg Ala Tyr Ile Asn Thr Pro Gly Leu Pro Val Cys Gln Asp His Leu  
260 265 270

Glu Phe Trp Glu Gly Val Phe Thr Gly Leu Thr Asn Ile Asp Ala His  
275 280 285

Met Leu Ser Gln Thr Lys Gln Gly Gly Glu Asn Phe Pro Tyr Leu Val  
290 295 300

Ala Tyr Gln Ala Thr Val Cys Val Arg Ala Lys Ala Pro Pro Pro Ser  
305 310 315 320

Trp Asp Thr Met Trp Lys Cys Met Leu Arg Leu Lys Pro Thr Leu Thr  
325 330 335

Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Pro Val Gln Asn Glu Ile  
340 345 350

Thr Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala Cys Met Ser Ala  
355 360 365

Asp Leu Glu Val Ile Thr Ser Thr Trp Val Leu Val Gly Gly Val Val  
370 375 380

Ala Ala Leu Ala Ala Tyr Cys Leu Thr Val Gly Ser Val Ala Ile Val  
385 390 395 400

Gly Arg Ile Ile Leu Ser Gly Lys Pro Ala Ile Ile Pro Asp Arg Glu  
405 410 415

Ala Leu Tyr Gln Gln Phe Asp Glu Met Glu Glu Cys Ser Ala Ser Leu  
420 425 430

Pro Tyr Met Asp Glu Thr Arg Ala Ile Ala Gly Gln Phe Lys Glu Lys  
435 440 445

Val Leu Gly Phe Ile Ser Thr Thr Gly Gln Lys Ala Glu Thr Leu Lys  
450 455 460

Pro Ala Ala Thr Ser Val Trp Asn Lys Ala Glu Gln Phe Trp Ala Thr  
465 470 475 480

Tyr

<210> 271  
<211> 5  
<212> PRT  
<213> hepatitis C virus

<400> 271

Leu Glu Trp Arg Asn  
1 5

<210> 272  
<211> 20  
<212> PRT  
<213> hepatitis C virus

<400> 272

Leu Ser Gly Lys Pro Ala Ile Ile Pro Asp Arg Glu Val Leu Tyr Arg  
1 5 10 15

Glu Phe Asp Glu  
20

<210> 273  
<211> 20  
<212> PRT  
<213> hepatitis C virus

<400> 273

Ser Gln His Leu Pro Tyr Ile Glu Gln Gly Met Met Leu Ala Glu Gln  
1 5 10 15

Phe Lys Gln Lys  
20

<210> 274  
<211> 20  
<212> PRT  
<213> hepatitis C virus

<400> 274

Leu Ala Glu Gln Phe Lys Gln Lys Ala Leu Gly Leu Leu Gln Thr Ala  
1 5 10 15

Ser Arg Gln Ala  
20

<210> 275  
<211> 20  
<212> PRT  
<213> hepatitis C virus

<400> 275

Leu Ser Gly Arg Pro Ala Val Ile Pro Asp Arg Glu Val Leu Tyr Gln  
1 5 10 15

Glu Phe Asp Glu  
20

<210> 276  
<211> 20  
<212> PRT  
<213> hepatitis C virus

<400> 276

Ala Ser His Leu Pro Tyr Ile Glu Gln Gly Met Gln Leu Ala Glu Gln  
1 5 10 15

Phe Lys Gln Lys  
20

<210> 277  
<211> 20  
<212> PRT  
<213> hepatitis C virus  
  
<400> 277

Leu Ala Glu Gln Phe Lys Gln Lys Ala Leu Gly Leu Leu Gln Thr Ala  
1 5 10 15

Thr Lys Gln Ala  
20

<210> 278  
<211> 20  
<212> PRT  
<213> hepatitis C virus  
  
<400> 278

Val Asn Gln Arg Ala Val Val Ala Pro Asp Lys Glu Val Leu Tyr Glu  
1 5 10 15

Ala Phe Asp Glu  
20

<210> 279  
<211> 20  
<212> PRT  
<213> hepatitis C virus  
  
<400> 279

Ala Ser Arg Ala Ala Leu Ile Glu Glu Gly Gln Arg Ile Ala Glu Met  
1 5 10 15

Leu Lys Ser Lys  
20

<210> 280  
<211> 20  
<212> PRT  
<213> hepatitis C virus  
  
<400> 280

Ile Ala Glu Met Leu Lys Ser Lys Ile Gln Gly Leu Leu Gln Gln Ala

1 5 10 15

Ser Lys Gln Ala  
20

<210> 281  
<211> 20  
<212> PRT  
<213> hepatitis C virus

<400> 281

Leu Asn Asp Arg Val Val Val Ala Pro Asp Lys Glu Ile Leu Tyr Glu  
1 5 10 15

Ala Phe Asp Glu  
20

<210> 282  
<211> 20  
<212> PRT  
<213> hepatitis C virus

<400> 282

Ala Ser Lys Ala Ala Leu Ile Glu Glu Gly Gln Arg Met Ala Glu Met  
1 5 10 15

Leu Lys Ser Lys  
20

<210> 283  
<211> 20  
<212> PRT  
<213> hepatitis C virus

<400> 283

Met Ala Glu Met Leu Lys Ser Lys Ile Gln Gly Leu Leu Gln Gln Ala  
1 5 10 15

Thr Arg Gln Ala  
20

<210> 284  
<211> 20  
<212> PRT  
<213> hepatitis C virus

<400> 284

Ala Ala Ser Leu Pro Tyr Met Asp Glu Thr Arg Ala Ile Ala Gly Gln  
1 5 10 15

Phe Lys Glu Lys  
20